

GAURAV ARYA

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EDUCATION

Doctor of Philosophy, Chemical Engineering, May 2003
University of Notre Dame, Notre Dame, IN

Bachelor of Technology, Chemical Engineering, July 1998
Indian Institute of Technology (IIT) Bombay, Mumbai, India

PROFESSIONAL APPOINTMENTS

Associate Professor, July 2013–present
Department of NanoEngineering, University of California, San Diego
Affiliate faculty of the Materials Science and Bioinformatics programs

Assistant Professor, September 2007–June 2013
Department of NanoEngineering, University of California, San Diego

Assistant Research Scientist, July 2005–May 2007
Department of Chemistry & Courant Institute of Mathematical Sciences, New York University
Supervisor: Prof. Tamar Schlick

Postdoctoral Research Associate, July 2003–June 2005
Department of Chemical Engineering, Princeton University
Supervisor: Prof. Athanassios Z. Panagiotopoulos

Research Assistant, August 1998–May 2003
Department of Chemical and Biomolecular Engineering, University of Notre Dame
Thesis: Molecular simulation of transport through nanoporous materials
Advisors: Prof. Edward J. Maginn and Prof. Hsueh-Chia Chang

HONORS AND AWARDS

2008 Hellman Foundation Faculty Fellowship, University of California, San Diego
2002 SGI Computational Science and Visualization Award, University of Notre Dame
2002-03 Center for Applied Mathematics Fellowship, University of Notre Dame
2000-01 Center for Applied Mathematics Fellowship, University of Notre Dame

PEER-REVIEWED PUBLICATIONS

* Corresponding author, # shared first authorship

1. G. D. Hattener and **G. Arya***, "Viscoelastic properties of polymer-grafted nanoparticle composites from molecular dynamics simulations," *Macromolecules*, vol. 48, p. 1240, 2015.

2. H. Kabra, Y. Hwang, H. L. Lim, M. Kar, **G. Arya**, and S. Varghese, "Biomimetic material-assisted delivery of human embryonic stem cell-derived cells for enhanced in vivo survival and engraftment," *ACS Biomaterials Science & Engineering*, vol. 1, p. 7, 2015.
3. D. Meluzzi and **G. Arya***, "Efficient estimation of contact probabilities from inter-bead distance distributions in simulated polymer chains," *Journal of Physics: Condensed Matter*, vol. 27, no. 064120, 2015 (**Invited Article**).
4. A. D. Migliori, D. E. Smith, and **G. Arya***, "Molecular interactions and residues involved in force generation in the T4 viral DNA packaging motor," *Journal of Molecular Biology*, vol. 426, p. 4002, 2014.
5. G.-M. Nam and **G. Arya***, "Torsional behavior of chromatin is modulated by rotational phasing of nucleosomes," *Nucleic Acids Research*, vol. 42, p. 9691, 2014.
6. A. D. Migliori, N. Keller, T. I. Alam, M. Mahalingam, V. B. Rao, **G. Arya***, and D. E. Smith, "Evidence for an electrostatic mechanism of force generation by the bacteriophage T4 DNA packaging motor," *Nature Communications*, vol. 5, p. 4173, 2014.
7. V. Agarwal, **G. Arya**, and J. Oswald, "Simultaneous iterative Boltzmann inversion for coarse-graining of polyurea," *Macromolecules*, vol. 47, p. 3378, 2014.
8. S. I. Walker, B. J. Callahan, **G. Arya**, J. D. Barry, T. Bhattacharya, S. Grigoryev, M. Pellegrini, K. Rippe, S. M. Rosenberg, "Evolutionary dynamics and information hierarchies in biological systems," *Annals of the New York Academy of Sciences*, vol. 1305, p. 1, 2013.
9. D. Meluzzi and **G. Arya***, "Recovering ensembles of chromatin conformations from contact probabilities," *Nucleic Acids Research*, vol. 41, p. 63, 2013
10. I. V. Dobrovolskaia and **G. Arya***, "Dynamics of forced nucleosome unraveling and role of nonuniform histone-DNA interactions," *Biophysical Journal*, vol. 103, p. 989, 2012
11. B. V. S. Iyer and **G. Arya***, "Lattice animal model of chromosome organization," *Physical Review E*, vol. 86, no. 011911, 2012.
12. B. Gao, **G. Arya**, and A. R. Tao, "Self-orienting nanocubes for the assembly of plasmonic nanojunctions," *Nature Nanotechnology*, vol. 7, p. 433, 2012
Highlighted by Jacobs School of Engineering; Commentary in Nature Nanotechnology
13. B. Arman, A. Srinivas Reddy, and **G. Arya***, "Viscoelastic properties and shock response of coarse-grained models of multiblock versus diblock copolymers: Insights into dissipative properties of polyurea," *Macromolecules*, vol. 45, p. 3247, 2012
14. A. Phadke, C. Zhang, B. Arman, C.-C. Hsu, R. A. Mashelkar, A. K. Lele, M. Tauber, **G. Arya**, S. Varghese, "Rapid self-healing hydrogels," *Proceedings of the National Academy of Sciences (USA)*, vol. 109, p. 4383, 2012

Highlighted by Scientific American science podcast; Highlighted on the cover of PNAS;
Highlighted in Research Highlights of Biopolymers; Highlighted in the Jacobs School of
Engineering magazine "Pulse"

15. D. Meluzzi, K. E. Olson, G. F. Dolan, **G. Arya***, U. F. Muller*, "Computational prediction of efficient splice sites for trans-splicing ribozymes," *RNA*, vol. 18, p. 590, 2012
16. B. V. S. Iyer, M. Kenward, and **G. Arya***, "Hierarchies in eukaryotic genome organization: Insights from polymer theory and simulations," *BMC Biophysics*, vol. 4, no. 8, 2011
Highlighted by BMC Biophysics; "Highly Accessed" article in BMC Biophysics
17. R. Ayala, C. Zhang, D. Yang, A. Aung, Y.-S. Hwang, S. S. Shroff, F. T. Arce, R. Lal, **G. Arya**, and S. Varghese, "Engineering cell-material interface for controlling stem cell adhesion, migration, and differentiation," *Biomaterials*, vol. 32, p. 3700, 2011
"Top 25" downloaded articles in Biomaterials during 2011
18. D. Yang and **G. Arya***, "Structure and binding of the H4 histone tail and the effects of lysine 16 acetylation," *Physical Chemistry Chemical Physics*, vol. 13, p. 2911, 2011
19. A. Maitra and **G. Arya***, "Influence of pulling handles and device stiffness in single-molecule force spectroscopy," *Physical Chemistry Chemical Physics*, vol. 13, p. 1836, 2011
Selected for the themed issue on Single Molecule Optics Studies on Soft Matter
20. H. L. Lim, J. C. Chuang, T. M. Tran, A. Aung, **G. Arya***, and S. Varghese*, "Dynamic electromechanical hydrogel matrices for stem cell culture," *Advanced Functional Materials*, vol. 21, p. 55, 2011
Highlighted in "Chemical Engineering Progress" magazine, Highlighted in "Materials Views",
Highlighted by Jacobs School of Engineering
21. **G. Arya***, "Chain stiffness and attachment dependent attraction between polyelectrolyte grafted colloids," *Journal of Physical Chemistry B*, vol. 114, p. 15886, 2010
22. N. Sangaj, P. Kyriakakis, D. Yang, C. W. Chang, **G. Arya**, and S. Varghese, "Heparin mimicking polymer promotes myogenic differentiation of muscle progenitor cells," *Biomacromolecules*, vol. 11, p. 3294, 2010
23. I. V. Dobrovolskaia[#], M. Kenward[#], and **G. Arya***, "Twist propagation in dinucleosome arrays," *Biophysical Journal*, vol. 99, p. 3355, 2010
24. D. Meluzzi, D. E. Smith*, and **G. Arya***, "Biophysics of knotting," *Annual Review of Biophysics*, vol. 39, p. 349, 2010
Invited review article
25. **G. Arya***, A. Maitra, and S. Grigoryev*, "A structural perspective on the where, how, what, and why of nucleosome positioning," *Journal of Biomolecular Structure and Dynamics*, vol. 27, p. 803, 2010
Invited review for special issue on Nucleosome Positioning

26. A. Maitra and **G. Arya***, "Model accounting for the effects of pulling-device stiffness in the analyses of single-molecule force measurements," *Physical Review Letters*, vol. 104, p. 108301, 2010
Selected for the Virtual Journal of Biological Physics
27. **G. Arya***, "Energetic and entropic forces governing the attraction between polyelectrolyte grafted Colloids," *Journal of Physical Chemistry B*, vol. 113, p. 15760, 2009
28. S. Grigoryev[#], **G Arya[#]**, S. Correll, C. Woodcock, and T. Schlick, "Evidence for heteromorphic chromatin fibers from analysis of nucleosome interactions," *Proceedings of the National Academy of Sciences USA*, vol. 106, p. 13317, 2009
Selected for the Virtual Journal of Biological Physics; Highlighted in the Stanford University Press magazine "Biomedical Computation Review"; Highlighted in the Jacobs School of Engineering magazine "Pulse"
29. **G. Arya*** and T. Schlick*, "A tale of tails: How histone tails compact chromatin in different salt and linker histone environments," *Journal of Physical Chemistry A*, vol. 113, p. 4045, 2009
Invited Article for George C. Schatz Festschrift.
30. O. J. Hehmyer, **G. Arya**, A. Z. Panagiotopoulos, and I. Szleifer, "Monte Carlo simulation and molecular theory of tethered polyelectrolytes," *Journal of Chemical Physics*, vol. 126, no. 244902, 2007
31. **G. Arya** and T. Schlick, "Efficient global biopolymer sampling with end-transfer configurational-bias Monte Carlo," *Journal of Chemical Physics*, vol. 126, no. 044107, 2007
32. **G. Arya** and T. Schlick, "Role of histone tails in chromatin folding revealed by a new mesoscopic oligonucleosome model," *Proceedings of the National Academy of Sciences of the USA*, vol. 103, p. 16236, 2006
Selected for the Virtual Journal of Nanoscale Science & Technology; Featured on New York Academy of Sciences
33. **G. Arya**, Q. Zhang, and T. Schlick, "Flexible histone tails in a new mesoscopic model of oligonucleosomes," *Biophysical Journal*, vol. 91, p. 133, 2006
Cover Article in the July 2006 issue of Biophysical Journal
34. **G. Arya*** and A. Z. Panagiotopoulos, "Log-rolling micelles in sheared amphiphilic thin films," *Physical Review Letters*, vol. 95, no. 188301, 2005
Selected for the Virtual Journal of Nanoscale Science & Technology
35. **G. Arya*** and A. Z. Panagiotopoulos, "Impact of branching on the phase behavior of polymers," *Macromolecules*, vol. 38, p. 10596, 2005
36. **G. Arya***, J. Rottler, A. Z. Panagiotopoulos, D. J. Srolovitz, and P. M. Chaikin, "Shear ordering in thin films of spherical block copolymers," *Langmuir*, vol. 21, p. 11518, 2005
Highlighted by the Princeton Materials Institute

37. **G. Arya** and A. Z. Panagiotopoulos, "Molecular modeling of shear-induced alignment of cylindrical micelles", *Computer Physics Communications*, vol. 169, p. 262, 2005
38. **G. Arya** and A. Z. Panagiotopoulos, "Monte Carlo study of shear-induced alignment of cylindrical micelles in thin films," *Physical Review E*, vol. 70, no. 031501, 2004
Selected for the Virtual Journal of Nanoscale Science & Technology; Highlighted by the Princeton Materials Institute
39. O. J. Hehmeyer, **G. Arya**, and A. Z. Panagiotopoulos, "Phase transitions of confined lattice homopolymers," *Journal of Physical Chemistry B*, vol. 108, p. 6809, 2004
Invited article for Hans C. Andersen Festschrift
40. **G. Arya**, H. -C. Chang, and E. J. Maginn, "Knudsen diffusivity of a hard sphere in a rough slit-pore," *Physical Review Letters*, vol. 91, no. 026102, 2003
41. **G. Arya**, H. -C. Chang, and E. J. Maginn, "Molecular simulation study of Knudsen wall-slip: Effect of wall morphology," *Molecular Simulation*, vol. 29, p. 697, 2003
42. L. I. Kioupis, **G. Arya**, and E. J. Maginn, "Pressure-enthalpy driven molecular dynamics for thermodynamic property calculation: Applications," *Fluid Phase Equilibria*, vol. 200, p. 93, 2002
43. **G. Arya**, H. -C. Chang, and E. J. Maginn, "A critical comparison of equilibrium, non-equilibrium and boundary driven molecular dynamics techniques for studying diffusion in microporous materials," *Journal of Chemical Physics*, vol. 115, p. 8112, 2001
44. **G. Arya**, E. J. Maginn, and H. -C. Chang, "Effect of surface energy barrier on sorbate diffusion in $\text{AlPO}_4\text{-5}$," *Journal of Physical Chemistry B*, vol. 105, p. 2725, 2001
45. **G. Arya**, E. J. Maginn, and H. -C. Chang, "Efficient viscosity estimation using molecular dynamics simulation via momentum impulse relaxation," *Journal of Chemical Physics*, vol. 113, p. 2079, 2000

INVITED TALKS

1. "Computational framework for elucidating the 3D spatial organization of chromatin from Hi-C experiments", Aegean Conference on Pathways, Networks and Systems Medicine, Crete, Greece, June 2015
2. "3D chromosome conformations from 2D interaction frequency maps", Bioengineering Graduate Student Symposium, Seoul National University, Seoul, South Korea, November 2013
3. "3D higher-order folded chromosome conformations from 2D interaction frequency maps", 2013 AMMCS meeting, Waterloo, Canada, July 2013
4. "2D to 3D to 1D: 2D Interaction frequency maps to 3D chromosome conformations, and 3D nanocubes to 1D plasmonic strings", Department of Chemical Engineering Seminar Series, SUNY Buffalo, NY, July 2013

5. "2D to 3D to 1D: 2D Interaction frequency maps to 3D chromosome conformations, and 3D nanocubes to 1D plasmonic strings", Department of Chemical Engineering Seminar Series, University of Toronto, Canada, July 2013
6. "2D to 3D: Interaction Frequency Maps to Chromatin Higher-Order Folded Conformations", Albany 2013: 18th Conversations, SUNY Albany, CA, June 2013
7. "Programmed assembly of polymer-grafted nanocubes into plasmonic nanojunctions", Advances in Microfluidics & Nanofluidics Symposium, University of Notre Dame, IN, May 2013
8. "Nanocubes and nucleosomes: One story of assembly and another of disassembly", 2012 Annual AIChE Meeting, Pittsburgh, PA, November 2012
9. "Modeling DNA organization: From Nucleosomes to Chromatin to Chromosomes", Aspen Center for Physics Workshop on Evolutionary Dynamics and Information Hierarchies, Aspen, CO, August 2012
10. "Modeling DNA Organization at all Scales: From Nucleosomes to Chromatin to Chromosomes", Biophysics Seminar, Ohio State University, Columbus, OH, May 2012
11. "Advanced Models for Analyzing Single Molecule Force Measurements", Materials Science and Engineering Colloquium, U. C. Riverside, Riverside, CA, November 2011
12. "Chromatin: Unraveling its complexity using mesoscale modeling", CECAM workshop, Dynamics of Protein-Nucleic Acid Interactions: Integrating Simulations with Experiments, ETH Zurich, Switzerland, September 2011
13. "Recovering single molecule energetics and kinetics from force spectroscopy", 2011 AMMCS meeting, Waterloo, Canada, July 2011
14. "Reliable analyses of single molecule force measurements", Telluride Workshop, Telluride, July 2011 (declined)
15. "Lattice animal model of interphase chromosomal organization", 2011 Biophysical Meeting, Pacific Grove, CA, July 2011
16. "The life of a DNA molecule", Department of NanoEngineering, U.C. San Diego, La Jolla, March 2011
17. "Chromatin: Unraveling its complexity using mesoscale modeling", Quantitative Biology Seminar Series, Rutgers University, New Brunswick, March 2011
18. "Advanced theoretical models for analyzing single molecule force measurements", College of Chemistry and Molecular Engineering, Peking University, China, November 2010
19. "Device effects in single molecule force spectroscopy", Frontiers in Systems and Integrative Biology Seminar Series, U.C. Los Angeles, Los Angeles, November 2010
20. "Role of theory and simulations in bioengineering", Bioengineering Department Seminar Series, U.C. San Diego, La Jolla, October 2010

21. "Interrogating single molecules using force", Department of Chemical Engineering, University of Texas, Austin, October 2010
22. "Interrogating single molecules using force", Brownian Diffusion and Brownian Dynamics Brainstorm 2 Workshop, UCSD-Heidelberg, October 2010
23. "Interrogating single molecules using force", Chemical Engineering Seminar Series, Georgia Tech, Atlanta, October 2010
24. "Reconstructing energy landscapes from single molecule pulling experiments", Chemical Engineering Seminar Series, U.C. Irvine, Irvine, October 2010
25. "Reconstructing energy landscapes from single molecule pulling measurements", Department of Materials Science & Engineering, MIT, Cambridge, August 2010
26. "Reconstructing energy landscapes from single molecule pulling measurements", 2010 ACS Annual meeting, Boston, August 2010
27. "Reconstructing energy landscapes from single molecule pulling experiments", Telluride Workshop on peptide and protein interactions in cellular environments, Telluride, June 2010
28. "Packing and pulling molecules", Physical Chemistry Seminar Series, U.C. Santa Barbara, Santa Barbara, May 2010
29. "Interrogating molecules", Penner Biomechanics Seminar Series, U.C. San Diego, La Jolla, May 2010
30. "Two new stories in the modeling of complex biomolecular systems", Center for Computational Sciences Seminar, Tulane University, New Orleans, October 2009
31. "What can mesoscopic modeling tell us about chromatin structure?", CECAM workshop, Lausanne, Switzerland, November 2009 (could not travel due to passport issues)
32. "From nucleosomes to chromatin: How is our genome packed and regulated", EMBL Heidelberg, Germany, February 2010
33. "Mesoscopic modeling predicts new polymorphic structure of chromatin," Albany 2009: 16th conversations, SUNY Albany, June 2009
34. "Understanding chromatin compaction and regulation via mesoscale modeling and simulations," Center for multiscale modeling and simulation, California Institute of Technology (Caltech), November 2008
35. "Protein beads, strings, and tails: How our DNA compacts," Jacobs School of Engineering Research Expo, University of California, San Diego, February 2008
36. "Mesoscopic modeling and simulation of chromatin," Informal Seminars on Mathematics and Biochemistry-Biophysics, University of California, San Diego, November 2007
37. "Mesoscopic modeling and simulation of chromatin," Center for Theoretical Biological Physics Seminars, University of California, San Diego, October 2007

38. "Mesoscopic modeling and simulation of chromatin," Department of Chemistry, Indian Institute of Technology, Delhi, July 2007
39. "Mesoscopic modeling and simulation of chromatin," Department of Mechanical and Aerospace Engineering, University of California, San Diego, May 2007
40. "Mesoscopic modeling and simulation of chromatin," Department of Biomedical Engineering, University of Illinois at Urbana-Champaign, Champaign, April 2007
41. "Mesoscopic modeling and simulation of chromatin," Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, Feb 2007
42. "A tale of histone tails and linker histone," Department of Chemical and Biomolecular Engineering, Ohio State University, Columbus, Feb 2007
43. "Mesoscopic modeling of chromatin: The role of histone tails and linker histone in chromatin folding," Department of Physics and Astronomy, Iowa State University, Ames, Feb 2007
44. "Role of histone tails and linker histone in chromatin folding revealed by a new mesoscopic oligonucleosome model," Department of Chemical Engineering, University of California, Berkeley, Jan 2007
45. "Role of histone tails and linker histone in chromatin folding revealed by a new mesoscopic oligonucleosome model," Department of Chemical Engineering, Purdue University, West Lafayette, Jan 2007
46. "Role of histone tails and linker histone in chromatin folding revealed by a new mesoscopic oligonucleosome model," Department of Chemical and Biological Engineering, Northwestern University, Evanston, Jan 2007
47. "Role of histone tails and linker histone in chromatin folding revealed by a new mesoscopic oligonucleosome model," Biochemistry Department, Kansas State University, Manhattan, Dec 2006
48. "Role of histone tails and linker histone in chromatin folding revealed by a new mesoscopic oligonucleosome model," Department of Chemical and Environmental Engineering, Illinois Institute of Technology, Chicago, Dec 2006
49. "Mesoscopic modeling of chromatin: A tale of histone tails and linker histone," Department of Molecular Physiology and Biophysics, Mount Sinai School of Medicine, New York, Oct 2006
50. "Mesoscopic modeling of chromatin: A tale of histone tails and linker histone," Department of Chemical Engineering, Princeton University, Princeton, June 2006
51. "Simulations and theory of charged brushes," 2005 Graduate Students Symposium, Princeton, October 2005

52. "Nanostructured block copolymer thin films obtained via directed self-assembly: A computational study," Department of Chemical Engineering, Clemson University, February 2005
53. "Nanostructured block copolymer thin films obtained via directed self-assembly: A computational study," Department of Chemical Engineering, University of Houston, February 2005
54. "Nanostructured block copolymer thin films obtained via directed self-assembly: A computational study," Department of Chemical Engineering, Auburn University, February 2005
55. "Polymer thin films: Shear-directed self-assembly and phase behavior," Department of Biomedical Engineering, Johns Hopkins University, May 2005
56. "Polymer thin films: Shear-directed self-assembly and phase behavior," Department of Chemistry, New York University, April 2005
57. "Monte Carlo simulations of shear-induced alignment of cylindrical micelles," Postdoc Symposium, Princeton, May 2004
58. "Monte Carlo simulations of self-assembly of surfactants under shear," Complex Materials Seminar Series, Princeton University, October 2003
59. "Molecular simulation of transport phenomena in microporous materials," Department of Chemical Engineering, Princeton University, March 2003
60. "Molecular modeling of transport processes in confined media," National Chemical Laboratory, Pune, India, December 2002.
61. "Shear viscosity of lubricants via molecular dynamics: I. Momentum impulse relaxation; II. Nonideal mixture viscosities," ExxonMobil Research and Engineering Company, Annandale, August 2001
62. "Applications of molecular simulation to transport processes," Graduate Students Research Workshop, Center for Applied Mathematics, Notre Dame, April 2001

CONFERENCE PRESENTATIONS

First author is the presenting speaker

1. D. Meluzzi and **G. Arya**, "Quantification of DNA cleavage specificity in Hi-C Experiments", 2014 RECOMB/ISCB Conference on Regulatory and Systems Genomics, San Diego, CA, Nov 2014
2. D. Meluzzi and **G. Arya**, "Quantification of DNA cleavage specificity in Hi-C Experiments", 2014 AIChE Meeting, Atlanta, GA, Nov 2014
3. C. R. Murthy and **G. Arya**, "Mechanism of Nanoparticle Assembly in Polymer Thin Films from Quantitative SEM Image Analysis", 2014 AIChE Meeting, Atlanta, GA, Nov 2014

4. **G. Arya**, "Self-assembly of plasmonic nanojunctions from polymer-grafted shaped nanoparticles", Gordon Research Conference on Colloidal, Macromolecular & Polyelectrolyte Solutions, Ventura, CA, Feb 2014
5. D. Meluzzi and **G. Arya**, "Computational methods for recovering ensembles of chromatin conformations from experimental contact probabilities", 2014 Biophysical Meeting, San Francisco, CA, Feb 2014
6. G.-M. Nam and **G. Arya**, "Dynamics of torsionally stressed chromatin", 2014 Biophysical Meeting, San Francisco, CA, Feb 2014
7. D. Meluzzi and **G. Arya**, "Computational recovery of chromatin conformations from experimental contact probabilities", 2013 AIChE Meeting, San Francisco, CA, November 2013
8. G.-M. Nam and **G. Arya**, "Dynamics of torsionally stressed chromatin", 2013 AIChE Meeting, San Francisco, CA, November 2013
9. G. Hattemer and **G. Arya**, "Viscoelastic behavior of grafted-nanoparticle/polymer composites", 2013 AIChE Meeting, San Francisco, CA, November 2013
10. D. Meluzzi and **G. Arya**, "Computational methods for recovering ensembles of chromatin conformations from experimental contact probabilities", 14th UC Systemwide Bioengineering Symposium, La Jolla, CA, June 2013
11. G.-M. Nam and **G. Arya**, "Dynamics of torsionally stressed chromatin fiber", 14th UC Systemwide Bioengineering Symposium, La Jolla, CA, June 2013
12. B. Arman, S. Reddy, and **G. Arya**, "Effect of chain architecture on the viscoelasticity and shock response of block copolymers", 2012 AIChE Meeting, Pittsburgh, PA, November 2012
13. D. Meluzzi and **G. Arya**, "Recovery of chromosome structural ensembles from contact probabilities", 2012 AIChE Meeting, Pittsburgh, PA, November 2012
14. A. D. Migliori, **G. Arya**, and D. E. Smith, "Experimental and computational studies on the DNA translocation mechanism of the T4 viral packaging motor," SPIE meeting, San Diego, CA, August 2012
15. A. D. Migliori, V. Kottadiel, V. Rao, **G. Arya**, and D. Smith, "Understanding the Bacteriophage T4 genome packaging motor by combining mutational analysis with molecular mechanics," Protein Society Symposia, San Diego, CA, August 2012
16. A. R. Tao, B. Gao, and **G. Arya**, "Polymer-directed orientation of shaped nanocrystals," 2012 ACS Meeting, San Diego, CA, March 2012
17. D. Meluzzi, A. Maitra, and **G. Arya**, "Extraction of free energies from dynamic single-molecule force spectroscopy," 2012 ACS Meeting, San Diego, CA, March 2012
18. I. V. Dobrovolskaia and **G. Arya**, "Chromatin dynamics and structure in response to external forces and torques," 2012 ACS Meeting, San Diego, CA, March 2012

19. B. Gao, **G. Arya**, and A. R. Tao “Self-orientation of anisotropic inorganic nanoparticles arrested within a polymer film,” 2012 ACS Meeting, San Diego, CA, March 2012
20. **G. Arya**, “Chromatin dynamics and structure in response to external forces and torques,” 2012 ACS Meeting, San Diego, CA, March 2012
21. D. Meluzzi, A. Maitra, and **G. Arya**, “Extraction of free energies from dynamic single-molecule force spectroscopy,” 2012 Biophysical Meeting, San Diego, CA, February 2012
22. I. V. Dobrovolskaia and **G. Arya**, “Chromatin dynamics and structure in response to external forces and torques,” 2012 Biophysical Meeting, San Diego, CA, February 2012
23. **G. Arya**, A. Maitra, and D. Meluzzi, “Recovering single molecule energetics and kinetics from force spectroscopy and steered simulations,” 2011 AIChE Annual Meeting, Minneapolis, MN, November 2011
24. **G. Arya**, I. V. Dobrovolskaia, and B.V.S. Iyer, “DNA folding and regulation: From nucleosomes to chromatin to chromosomes”, 2011 AIChE Annual Meeting, Minneapolis, MN, November 2011
25. **G. Arya**, “New insights into chromatin structure, dynamics, and regulation from theoretical modeling”, 2011 Biophysical Meeting, Pacific Grove, CA, July 2011
26. M. Kenward and **G. Arya**, “DNA looping mediated two-site binding proteins: Insights from Brownian dynamics simulations”, 2010 AIChE Annual Meeting, Salt Lake city, Utah, November 2010
27. M. Kenward, I. Dobrovolskaia, and **G. Arya**, “Twist propagation in two-nucleosome arrays: Monte Carlo simulations and theory”, 2010 AIChE Annual Meeting, Salt Lake city, Utah, November 2010
28. D. Meluzzi, K. Olson, U. Muller, and **G. Arya**, “Predicting accessible splice sites for trans-splicing ribozymes: modeling and experiments”, 2010 AIChE Annual Meeting, Salt Lake city, Utah, November 2010
29. B. V. S Iyer and **G. Arya**, “A new coarse-grained model of chromosome organization,” 2010 AIChE Annual Meeting, Salt Lake city, Utah, November 2010
30. A. Maitra and **G. Arya**, “Reconstructing free energy barrier heights and crossing rates from single-molecule pulling experiments,” 2010 AIChE Annual Meeting, Salt Lake city, Utah, November 2010
31. **G. Arya**, D. Meluzzi, K. Olson, and U. Muller, “Predicting accessible splice sites for trans-splicing ribozymes,” 2010 ACS Annual meeting, Boston, August 2010
32. **G. Arya** and D. Yang, “Plausible mechanism for H4-K16 mediated unfolding of chromatin,” 2010 ACS Annual meeting, Boston, August 2010
33. **G. Arya**, “Reconstructing energy landscapes from single molecule pulling measurements”, 2010 ACS Annual meeting, Boston, August 2010

34. **G. Arya**, "Harnessing device stiffness in analyzing single-molecule force measurements," 2010 Biophysical Meeting, San Francisco, February 2010
35. D. Meluzzi and **G. Arya**, "Predicting accessible splice sites for trans-splicing ribozymes," 2009 AIChE Annual Meeting, Memphis, Tennessee, November 2009
36. A. Maitra and **G. Arya**, "Improved analysis of single-molecule force-spectroscopy data for extracting free energy barrier heights and barrier crossing rates," 2009 AIChE Annual Meeting, Memphis, Tennessee, November 2009
37. T. Schlick and **G. Arya**, "An electrostatic/geometric mechanism for compact chromatin stabilization," 40th ACS Middle Atlantic Regional Meeting, Bayside, New York, May 2008
38. **G. Arya**, S. A. Grigoryev, and T. Schlick, "Computer modeling and electron microscopy reveal new linker-histone and physiological-salt induced conformational transitions in chromatin," 2008 Biophysical Meeting, Long Beach, February 2008
39. **G. Arya** and T. Schlick, "Linker histones compact chromatin through modulation of internucleosomal pattern," 26th Summer Symposium of Molecular Biology – Chromatin and Epigenetic Regulation of Transcription, Penn State University, June 2007
40. **G. Arya** and T. Schlick, "Mesoscopic modeling of chromatin: A tail of tails", NYU School of Medicine Structural Biology Seminar Series, New York, April 2007
41. **G. Arya**, "Multiscale modeling of biological systems," 2006 AIChE Annual Meeting, San Francisco, November 2006
42. **G. Arya** and T. Schlick, "A tale of how histone tails and linker histone regulate chromatin folding," 2006 AIChE Annual Meeting, San Francisco, November 2006
43. **G. Arya** and T. Schlick, "Role of histone tails and linker histone in chromatin folding as revealed by computer simulations," 232nd ACS National Meeting, San Francisco, September 2006
44. O. J. Hehmeyer, **G. Arya**, and A. Z. Panagiotopoulos, "Monte Carlo simulations and self-consistent mean field theory of polyelectrolyte brushes," 2005 AIChE Annual Meeting, Cincinnati, November 2005
45. A. Z. Panagiotopoulos and **G. Arya**, "Micellization and shear alignment in model surfactant systems," 229th ACS National Meeting, San Diego, March 2005
46. **G. Arya** and A. Z. Panagiotopoulos, "Molecular simulation study of shear-induced alignment of cylindrical micelles in thin films," 2004 AIChE Annual Meeting, Austin, November 2004
47. **G. Arya**, O. J. Hehmeyer, and A. Z. Panagiotopoulos, "Monte Carlo study of phase behavior and structure of confined homopolymers," 2004 AIChE Annual Meeting, Austin, November 2004

48. A. Z. Panagiotopoulos and **G. Arya**, "Molecular modeling of shear-induced alignment of cylindrical micelles," 2004 Conference on Computational Physics, Genoa, Italy, September 2004
49. A. Z. Panagiotopoulos, **G. Arya**, D. I. Kopelevich, and I. G. Kevrekedis, "Multiscale Modeling and Coarse Graining for Simulations of Self-Assembly," Annual APS March Meeting, Montreal, Canada, March 2004
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