

Curriculum Vitae

Aniket Bhattacharya
Professor
Department of Physics
University of Central Florida
Orlando, FL 32816-2385

Telephone: (407)-925-8306 (Cell)
(407)-823-2325 (Physics)
Skype: aniket501
Office: PSB 452
e-mail: Aniket.Bhattacharya@ucf.edu

URL: <https://sciences.ucf.edu/physics/person/aniket-bhattacharya>

Professional Preparation

Ph.D. : University of Maryland at College Park, Condensed Matter Physics (1992)
Dissertation: *"Quantum Monte Carlo simulations of an extended Hubbard Model for high temperature superconductivity"* (Thesis Advisor: C. S. Wang)
M.S. : University of Calcutta, College of Science, Physics (with first class) (1984)
B.S. : Presidency College, Physics (with first class Honors) (1981)

Appointments

Aug 2018 – Present: Professor, Department of Physics, University of Central Florida
Aug 2006 - Aug 2018 Associate Professor, Department of Physics, University of Central Florida
Aug 2000 - Aug 2006 Assistant Professor, Department of Physics University of Central Florida
July 1998 - July 2000 *Research Assistant Professor*, Michigan State University, East Lansing, MI
June 1994 - June 1998 *Research Associate*, Michigan State University, East Lansing, MI
Aug 1992- May 1994 *Post-Doctoral Fellow*, The Pennsylvania State University, State College, PA
Aug 1984- July 1992 *Teaching and Research Assistant*, University of Maryland, College Park, MD
Department of Physics & Center for Superconductivity Research

Fall 2010 - Spring 2011 *On Sabbatical leave from UCF*

Visiting Appointment: Institute for Physics, Johannes Gutenberg University, Germany
Summer 1999, 2003, 2006, 2007, 2008, 2009, 2019
Fall 2010, 2011, 2013, Spring 2011

Visiting Appointment: Helsinki University of Technology, Helsinki, Finland
Summer 2006, 2007, 2009, Fall 2010, Spring 2011

Visiting Appointment: Florida Atlantic University, Department of Physics (Fall 2010 & Spring 2011)

AWARDS & DISTINCTIONS

- Distinguished public service award from Lake Highland Preparatory School (2003)
- UCF TIP award (2006)
- Outstanding mentoring award for dissertation supervision by McKnight Foundation (2009).
- Invited visiting positions from Aalto University (formerly Helsinki University of Technology), Espoo, Finland, and from Institut for Physics, Johannes Gutenberg University Mainz, Germany

RESEARCH INTERESTS

Scaling theory & simulation studies soft matter systems, polymer & biologically inspired physics, DNA transport through nanopores, confined biopolymers in nano-channels and in a crowded environment, physics of intrinsically disordered proteins implicated in disease

PROFESSIONAL HIGHLIGHTS

- 2450+ citations (Google Scholar) of research papers with *h-index* 27, *i-10 index* 48.
- PI & Co-PI in approx 2.0 million (NSF, NASA, & NIH) research funding (with \$500,000 credit) at UCF.
- International reputation, recognition and leadership for research work on “DNA Transport through Nano-pore”
- Advisory board member of the Soft Matter Association of the America (SMAA).
- Member of the American Physical Society (APS)
- Member of the APS Fellowship Committee
- Invited speaker at the APS March meeting during focus sessions (2007, 2009, and 2012) on DNA Transport through Nanopore; 2024 (invited) for intrinsically disordered proteins.
- Invited speaker for the CECAM workshop on “*Polymer Translocation through Nanopores*”, Mainz, Germany (2012).
- Invited speaker for the workshop on DNA translocation “*Surmounting the insurmountable - pathways to Biological Physics*”, POSTECH, S. Korea (2014).
- Session chair and organizer: APS March Meeting various focus sessions on *DNA transport through nano pore, Conformation and dynamics of biopolymers* and *Intrinsically Disordered Proteins* item
Co-organizer of CECAM Flagship workshop entitled *Nanopore Translocation and Nanochannel Confined Biopolymers: bridging theory and experiments* September 8, 2021 - September 10, 2021, Trieste, Italy.
- Co-organizer of CECAM Flagship workshop in Lyon entitled *Nanofluidics in physics and biology* July 10, 2021 - July 13, 2023, ENS de Lyon, France,
- Panel and proposal reviewer for the NSF and other Asian and European agencies
- Reviewer for Nature publications, Physical Review Letters, Physical Review E, Journal of Chemical Physics, Macromolecules, European Physical Journal E, Physical Chemistry Chemical Physics and many other journals.
- External member of the dissertation (PhD) committee: McGill University (Canada), University of Ottawa (Canada), Jawaharlal Nehru Centre for Advanced Scientific Research (India), Indian Institute of Science Education and Research, Mohali (India).
- Dedicated external funding for teaching, mentoring and pedagogy.
- Active in STEM education community & new course development.
- Introduced and coordinated the very first course on Nano Physics at UCF, supported by a NSF-NUE (Nano Undergraduate Education) grant
- Created and taught special topics interdisciplinary courses at UCF: “*Introductory Physics for Life Sciences*”, “*Introduction to Soft Matter Physics*”
- Physics Graduate Coordinator (Graduate Program Director) during Fall 2006 - Fall 2009; the program underwent substantial growth.
- Physics department committees (past and present chair): Graduate Admission Committee, Graduate Curriculum & Affairs committee, Physics Candidacy Committee, Physics Colloquium Committee, etc.
- UCF Committee: Research Conflict of Interest Committee (RCOIC) (Appointed by the Provost);
- UCF College of Sciences (COS) committees: COS Promotion and Tenure Committee (Chair), COS committee for graduate studies and research, COS Sabbatical leave committee, COS Teaching Incentive Program (TIP) Committee.

Manuscript Submitted/arXiv/bioRxiv

2. Swarnadeep Seth and Aniket Bhattacharya
Accelerated Missense Mutation Identification in Intrinsically Disordered Proteins using Deep Learning, doi: <https://doi.org/10.1101/2024.07.07.602404> (submitted to BioMacromolecules), August 2024.

1. Swarnadeep Seth and Aniket Bhattacharya, *Current blockade maps of molecular features driven through a solitary nanopore using electrokinetic Brownian dynamics*, arXiv:2308.13931 [cond-mat.soft]; <https://doi.org/10.48550/arXiv.2308.13931>

US Patent

2. United States Patent: (Awarded)
Patent No.: US 12,049,663B2
Date of Patent: July 30, 2024
Inventors: Aniket Bhattacharya, Orlando, FL (US); Swarnadeep Seth, Orlando, FL (US)
Title: *Methods of Determining DNA Barcodes for efficient species categorization using Nanopore Translocation*
Applicant: University of Central Florida Research Foundation, Inc., Orlando, FL (US)
1. United States Patent: (Submitted)
United States Patent and Trademark Office Application number: 63/657,206
Date Filed: June 07, 2024
Inventors: Aniket Bhattacharya, Orlando, FL (US); Swarnadeep Seth, Orlando, FL (US)
Title: *Techniques for Predicting the Effect of Mutations in Intrinsically Disordered Proteins (IDPs)*
Applicant: University of Central Florida Research Foundation, Inc., Orlando, FL (US)

REFEREED PUBLICATIONS

69. Swarnadeep Seth, Brandon Stine, and Aniket Bhattacharya, “*Fine structures of intrinsically disordered proteins*”, **J. Chem. Phys.** **160**, 014902 (2024), <https://doi.org/10.1063/5.0176306>
68. Jacob Bair, Swarnadeep Seth, and Aniket Bhattacharya, “*Universality in conformations and transverse fluctuations of a semi-flexible polymer in a crowded environment*”, **J. Chem. Phys.** **158**, 204902 (2023). <https://doi.org/10.1063/5.0143814>
67. Swarnadeep Seth, Arthur Rand, Walter Reisner, William B. Dunbar, Robert Sladek, and Aniket Bhattacharya, “*Discriminating protein tags on dsDNA constructs using a dual Nanopore device*”, **Sci Rep** **12**, 11305 (2022). <https://doi.org/10.1038/s41598-022-14609-9>
66. Swarnadeep Seth and Aniket Bhattacharya “*How capture affects polymer translocation in a solitary nanopore*, **J. Chem. Phys.** **156**, 244902 (2022). <https://doi.org/10.1063/5.0094221>
65. Jan Rothorl, Sarah Wetterman, Peter Virnau, and Aniket Bhattacharya “*Knot formation of dsDNA pushed inside a nanochannel*” **Sci Rep** **12**, 5342 (2022). <https://doi.org/10.1038/s41598-022-09242-5>
64. Swarnadeep Seth and Aniket Bhattacharya, “*DNA Barcodes using a Double Nanopore System*” **Sci Rep** **11**, 9799 (2021). <https://doi.org/10.1038/s41598-021-89017-6>
63. Swarnadeep Seth and Aniket Bhattacharya, “*DNA Barcodes using a Cylindrical Nanopore*” **RSC Adv.**, **11**, 20781 (2021) **11**, 20781. <https://doi.org/10.1039/D1RA00349F>
62. Swarnadeep Seth and Aniket Bhattacharya, “*Polymer escape through a three dimensional Double-Nanopore System*”, **J. Chem. Phys.** **153**, 104901 (2020). <https://doi.org/10.1063/5.0015310>
61. Aniket Bhattacharya and Swarnadeep Seth “*Tug of war in a double-nanopore system*”, **Phys. Rev. E** **101**, 052407 (2020). <https://doi.org/10.1103/PhysRevE.101.052407>

60. Simon Bernier, Aiqun Huan, Walter Reisner, and Aniket Bhattacharya, "Evolution of Nested Folding States in Compression of a Strongly Confined Semiflexible Chain" **Macromolecules** **51** (11), 4012-4022 (2018). <https://doi.org/10.1021/acs.macromol.7b02748>
59. Ramesh Adhikari and Aniket Bhattacharya "Effect of solvent viscosity on driven translocation of a semi-flexible chain through a nano-pore" **Europhysics Letters** **121**, 68006 (2018). doi:10.1209/0295-5075/121/68006
58. Aiqun Huang, Walter Reisner, and Aniket Bhattacharya, "Dynamics of DNA Squeezed inside a Nanochannel via a Sliding Gasket", **Polymers** **8**, 352 (2016) (invited). <https://doi.org/10.3390/polym8100352>
57. Ramesh Adhikari and Aniket Bhattacharya, "Translocation of a semiflexible polymer through a nanopore in presence of attractive binding particles", **Phys. Rev. E** **81**, 032711 (2015).
56. Aiqun Huang, H.-P Hsu, Aniket Bhattacharya, and Kurt Binder, "Semiflexible macromolecules in quasi-one-dimensional confinement: Discrete versus continuous bond angles", **J. Chem. Phys.** **143**, 243102 (2015) (invited).
55. Ramesh Adhikari and Aniket Bhattacharya, "Deconvoluting chain heterogeneities from driven translocation through a nano-pore" **Euro Phys. Lett.** **109**, 38001 (2015).
54. Aiqun Huang, Aniket Bhattacharya, and Kurt Binder, "Conformations, Transverse Fluctuations and Crossover Dynamics of a Semi-Flexible Chain in Two Dimensions", **J. Chem. Phys.** **140**, 214902 (2014).
53. Aiqun Huang and Aniket Bhattacharya, "DNA confined in a two-dimensional strip geometry" **Euro Phys. Lett.** **106**, 18004 (2014).
52. Aiqun Huang, Ramesh Adhikari, Aniket Bhattacharya, and Kurt Binder, "Universal monomer dynamics of a two dimensional semiflexible chain", **Euro Phys. Lett.** **105**, 18002 (2014).
51. Christopher J. Clukay, Christopher N. Grabill, Michelle A. Hettinger, Aniruddha Dutta, Daniel J. Freppon, Anthony Robledo, Helge Heinrich, Aniket Bhattacharya, Stephen M. Kuebler, "Controlling formation of gold nanoparticles generated in situ at a polymeric surface", **Applied Surface Science** **292**, 128 (2013).
50. Ramesh Adhikari and Aniket Bhattacharya, "Driven translocation of a semi-flexible Chain through a nanopore: A Brownian dynamics simulation study in two dimensions", **J. Chem. Phys.** **138**, 204909 (2013).
49. A. Dutta, C. J. Clukay, C. N. Grabill, D. J. Freppon, A. Bhattacharya, S. M. Kuebler, and H. Heinrich, "Nanoscale Characterization of gold nanoparticles created by in situ reduction at a polymeric surface", **Journal of Microscopy**, **251**, 27 (2013).
48. Timo Ikonen, Aniket Bhattacharya, Tapio Ala-Nissila, and Wokyung Sung, "Influence of pore friction on the universal aspects of driven polymer translocation" **Euro Phys. Lett.** **103** 38001 (2013).
47. Aniket Bhattacharya, "Translocation Dynamics of a Semi-flexible Chain Under a Bias: Comparison with Tension Propagation Theory, **Polymer Science Series C** **55**, 1 (2013). (invited)

46. Timo Ikonen, Aniket Bhattacharya, Tapio Ala-Nissila, and Wokyung Sung,
"Influence of non-universal effects on dynamical scaling in driven polymer translocation",
J. Chem. Phys. 137 085101 (2012).
45. Timo Ikonen, Aniket Bhattacharya, Tapio Ala-Nissila, and Wokyung Sung,
"Unifying model of driven polymer translocation",
Phys. Rev. E 85, 051803 (2012).
44. Anthony Robledo, Christopher N. Grabill, Stephen M. Kuebler, Aniruddha Dutta, Helge Heinrich, and Aniket Bhattacharya,
"Morphologies from slippery ballistic deposition model: A bottom-up approach for nanofabrication",
Phys. Rev. E 83, 051604 (2011).
43. Christopher Lorsch, Tapio Ala-Nissila, and Aniket Bhattacharya,
"Polymer Translocation induced by a Bad Solvent",
Phys. Rev. E. 83, 011914 (2011).
42. Aniket Bhattacharya and Kurt Binder,
"Out-of-equilibrium aspects of a translocating chain through a nanopore",
Phys. Rev. E 81, 041804 (2010).
41. Aniket Bhattacharya, Heath Morrison, Kaifu Luo, Tapio Ala-Nissila, See-Chen Ying, Andrey Milchev, and Kurt Binder,
"Scaling of Driven Polymer Translocation through a nanopore",
Eur. Phys. J. E 29, 423 (2009).
40. Kaifu Luo, Tapio Ala-Nissila, See-chen Ying, Aniket Bhattacharya,
"Translocation Dynamics with Attractive Nanopore-Polymer Interactions",
Phys. Rev. E 78, 061918 (2008).
39. Kaifu Luo, Tapio Ala-Nissila, See-chen Ying, Aniket Bhattacharya,
"Dynamics of DNA translocation through an attractive nanopore",
Phys. Rev. E 78, 061911 (2008).
38. Kaifu Luo, Santtu T. T. Ollila, Ilkka Huopaniemi, Tapio Ala-Nissila, Pawel Pomorski, Mikko Karttunen, See-Chen Ying, and Aniket Bhattacharya
"Dynamical Scaling Exponents for Polymer Translocation through a Nanopore"
Phys. Rev. E 78, 050901(R) (2008).
37. Kaifu Luo, Tapio Ala-Nissila, S-C Ying, and Aniket Bhattacharya,
"Sequence dependence of DNA translocation thorough a nanopore"
Phys. Rev. Lett. 100, 1058101 (2008).
36. Kaifu Luo, Tapio Ala-Nissila, S-C Ying, and Aniket Bhattacharya,
"Influence of polymer-pore interactions on translocation",
Phys. Rev. Lett. 99, 148102 (2007).
35. George Bourov and Aniket Bhattacharya,
"Effect of hydrophilicity and packing constraints in phase diagram of amphiphiles: An off-lattice Gibbs ensemble Monte Carlo approach"
J. Chem. Phys. 127, 244905 (2007).
34. K. Luo, T. Ala-Nissila, S-C Ying, and Aniket Bhattacharya,
"Heteropolymer Translocation through Nanopore",
J. Chem. Phys. 126, 14501 (2007).

33. Monojoy Goswami, Sanat K. Kumar, Aniket Bhattacharya, and Jack F. Douglas,
"Computer simulations of ionomer self-assembly and dynamics"
Macromolecules **40**, 4113 (2007).
32. Wayne Finger, J. Kapat, and Aniket Bhattacharya,
"Molecular Dynamics Simulation of Absorbent Layer effect on Tangential Momentum Accommodation Coefficient",
J. Fluids. Eng. **129**, 31 (2006).
31. Vincent Maycock and Aniket Bhattacharya,
"Effect of head-tail ratio and range of head-head interaction in Amphiphilic Self-assembly",
Euro. Phys. J. E **20**, 201 (2006).
30. Geougui Bourov and Aniket Bhattacharya,
"Brownian dynamics of mixed surfactant micelles",
J. Chem. Phys. **123**, 204712 (2005).
29. A. Milchev, K. Binder, and Aniket Bhattacharya,
"Polymer translocation through a nanopore induced by adsorption: Monte Carlo simulation of a coarse-grained model",
J. Chem. Phys. **121**, 6042 (2004).
28. Geougui Bourov and Aniket Bhattacharya,
"Brownian Dynamics Simulation Study of Self-assembly of Amphiphiles with Large Hydrophilic Head",
J. Chem. Phys. **122**, 044702 (2005).
27. Aniket Bhattacharya,
"Conformation and drift of a telechelic chain in porous media",
J. Phys.: Condens. Matter **16**, S203 (2004).
26. M.D. Johnson, X. Duan, Brett Riley, Aniket Bhattacharya, and Weili Luo,
"Thermodynamic Model of Electric-Field-Induced Pattern Formation in Binary Dielectric Fluids",
Phys. Rev. E **69**, 041501 (2004).
25. Geougui Bourov and Aniket Bhattacharya,
"The role of Geometric Constraints in Amphiphilic Self-Assembly: a Brownian Dynamics Study",
J. Chem. Phys. **119**, 9219 (2003).
24. Aniket Bhattacharya and Andrey Milchev,
"Electrophoresis of an end-labeled polymer chain: a molecular dynamics study",
Phys. Rev. E **66**, 041806 (2002).
23. Andrey Milchev and Aniket Bhattacharya,
"Polymer depletion interaction between a colloid particle and a wall",
J. Chem. Phys. **117**, 5415 (2002).
22. Brett Riley, Aniket Bhattacharya, Michael Johnson, Xiaodong Duan, and Weili Luo,
"Electric Field Induced Lamellar Structures in Magnetic Fluids: A 2D diffusion model",
Int. Journal Mod. Phys. B **16**, 2341 (2002).
21. Aniket Bhattacharya and S. D. Mahanti,
"Critical Micelle Concentration in three dimensional lattice models of amphiphiles",
 Letter to the Editor, **J. Phys.: Condens. Matter** **13**, L861 (2001).
20. Aniket Bhattacharya and S. D. Mahanti,
"Self-Assembly of ionic surfactants and formation of mesostructures",
J. Phys.: Condens. Matter **13**, 1413 (2001).

19. A. Milchev, Aniket Bhattacharya, and K. Binder,
"Formation of block copolymer micelles in solution: A Monte Carlo study of chain length dependence",
Macromolecules **34**, 1881 (2001).
18. Aniket Bhattacharya & S. D. Mahanti,
"Energy and size fluctuations of amphiphilic aggregates in a lattice model",
J. Phys.: Condens. Matter **12**, 6141 (2000).
17. Hong Liu, Aniket Bhattacharya, and Amitabha Chakrabarti,
"Network Domain Structure in Phase Separating Polymer Solutions",
J. Chem. Phys. **111**, 11183 (1999).
16. Hong Liu, Aniket Bhattacharya, and Amitabha Chakrabarti,
"Early Stage Dewetting of Microscopically Thin Polymer Films: A Molecular Dynamic Study",
J. Chem. Phys. **109**, 8607 (1998).
15. Aniket Bhattacharya, S. D. Mahanti, and Amitabha Chakrabarti,
"Self-Assembly of Neutral and Ionic Surfactants: An Off-Lattice Monte Carlo Approach",
J. Chem. Phys. **108**, 10281 (1998).
14. Aniket Bhattacharya, S. D. Mahanti, and Amitabha Chakrabarti,
"Network-like Pattern Formation in Phase Separating Polymer Solutions: a Molecular Dynamics Study",
Phys. Rev. Lett. **80**, 333 (1998).
13. Aniket Bhattacharya and S. D. Mahanti,
"Spin echo diffraction in disordered porous media with single length scales",
Phys. Rev. B **55**, 11230 (1997).
12. Gayle Tanner, Aniket Bhattacharya, Saroj K. Nayak, and S. D. Mahanti,
"Dynamics of melting Argon clusters",
Phys. Rev. E **55**, 322 (1997).
11. Aniket Bhattacharya, Madan Rao, and A. Chakrabarti,
"Kinetics of phase ordering of nematic liquid crystals in a confined geometry",
Phys. Rev. E **53**, 4899 (1996).
10. Aniket Bhattacharya, S. D. Mahanti, and A. Chakrabarti,
"Diffusion and magnetic relaxation in model porous media",
Phys. Rev. B **53**, 11495 (1996).
9. Aniket Bhattacharya, B. Y. Chen & S. D. Mahanti,
"Structural dynamics of clusters near melting",
Rapid Communication, Phys. Rev. E **53**, R33 (1996).
8. Marek Cieplak, Amos Maritan, Michael Swift, Aniket Bhattacharya, and & Jayanth Banavar,
"Optimal path and universality",
J. Phys. A **28**, 5693 (1995).
7. Aniket Bhattacharya and J. B. Anderson,
"The interaction potential of a symmetric helium trimer",
J. Chem. Phys. **100**, 8999 (1994).
6. Aniket Bhattacharya,
"Random walk for interacting particles on a Sierpinski Gasket",
Phys. Rev. E **49**, 4946 (1994).

5. Aniket Bhattacharya and J. B. Anderson,
"Exact quantum Monte Carlo calculation of the H-He interaction potential",
Phys. Rev. A 49, 2441 (1994).
4. Aniket Bhattacharya, Madan Rao, and Amitabha Chakrabarti,
"Phase separation in binary mixtures confined in a strip geometry",
Phys. Rev. E 49, 524 (1994).
3. Aniket Bhattacharya and C. S. Wang,
"Spin and charge fluctuations in an extended Hubbard model of oxide superconductors",
Phys. Rev. B 48, 13949 (1993).
2. 295 Aniket Bhattacharya and C. S. Wang,
"Generalized flux phases, Hubbard versus $t - J$ model",
Rapid Communication, Phys. Rev. B 45, 10826 (1992).
1. C. S. Wang, P. A. Sterne, P. G. McQueen, and Aniket Bhattacharya,
"Magnetic interactions in High- T_c Superconductors",
Journal de Physique 49, 2243 (1988).

REFEREED CONFERENCE PROCEEDINGS:

9. Aniket Bhattacharya, "Scaling Theory for Driven Polymer Translocation through a Double Nanopore" 2022 J. Phys.: Conf. Ser. 2241 012002 (invited), doi:10.1088/1742-6596/2241/1/012002
 33rd Annual CSP Workshop: *Recent Development in Computer Simulation Studies in Condensed Matter Physics* (CSP 2020) 17-21 February, 2020 Athens, Georgia, USA.
8. Aniket Bhattacharya, "Some aspects of a two-pore translocation problem" 2021 J. Phys.: Conf. Ser. 2122 012003 (invited), doi:10.1088/1742-6596/2122/1/012003
 32nd Annual CSP Workshop: *Recent Development in Computer Simulation Studies in Condensed Matter Physics* (CSP 2019) 18-22 February, 2019 Athens, Georgia, USA.
7. A. Krenn, S. Starr, R. Youngquist, M. Nurge, J. Sass, J. Fesmire, C. Cariker, and A. Bhattacharya,
"The safe removal of frozen air from the annulus of an LH2 storage tank", *2015 Cryogenic Engineering Conference and International Cryogenic Materials Conference*, Tucson, Arizona, June 28 - July 02, **2015**.
6. Aniket Bhattacharya,
"How local factors affect the "universal" scaling exponents of forced polymer translocation through a nano-pore", (invited) *Computer Simulation Studies in Condensed Matter Physics XXII*, Eds. D. P. Landau, S. P. Lewis, and H. B. Schuttler, Elsevier, **2009**.
5. Aniket Bhattacharya and Georgui Bourov,
"Effect of packing parameter on amphiphilic self-assembly: a Brownian dynamics study", (invited) *Computer Simulation Studies in Condensed Matter Physics XVI*, Eds. D. P. Landau, S. P. Lewis, and H. B. Schuttler (Springer Verlag, Heidelberg, Berlin, **2003**).
4. Aniket Bhattacharya and S. D. Mahanti,
"Self-Assembly of Amphiphiles: An Overview of Lattice and Continuum Model Simulations", *Proceedings of the Science and Technology of the Nanostructured Materials* held in Puri, India, January 4-8, **2001**, Nova Publisher, U.S.A.
3. S. D. Mahanti and Aniket Bhattacharya,
"Melting and Dynamics of Clusters", *Proceedings of the International Conference On Clusters And Nanostructured Materials, held in Puri, India, December, 1994 - January 1995*, ed. P. Jena and S. N. Behera (Nova Science Publishers).

2. Aniket Bhattacharya and S. D. Mahanti,
“Diffusion and magnetic relaxation in computer generated model porous media”,
Proceedings of the Access in Nanoporous Media Symposium, held in Lansing, Michigan, June 7-9,
1995, ed. T. J. Pinnavaia and M. F. Thorpe (Plenum).
1. B. Y. Chen, W. Hammond, A. Bhattacharya, S. D. Mahanti, and M. Youssoff,
“Rare Gas Clusters Inside K-L Zeolite Cage”, *International Symposium on the science and technology of atomically engineered materials* held in Richmond, Virginia, **1995**.

Book Chapter

1. Swarnadeep Seth and Aniket Bhattacharya, *DNA barcodes using a dual nanopore device, DNA Barcoding Methods and Protocols; Methods in Molecular Biology 2744*, editor Robert Desalle, Humana Press (2024); <https://doi.org/10.1007/978-1-0716-3581-0> (2023).

FUNDING HISTORY

Pending Proposals

- “Physical characteristics of biomolecular condensates, mutations, and disease progression in intrinsically disordered proteins
Amount - \$1,265,370 USD
Sponsoring Agency: NIH-NIGMS
PI: Aniket Bhattacharya
Project period: 06/01/2025 - 08/31/2026
- “Collaborative Research: Theory, Simulations, and Measurements of the Soret Effect in Liquid and Polymer Electrolytes”
Sponsoring Agency: NSF-CBET
Amount - \$196,827
co-PI: Aniket Bhattacharya
Amount - \$99,723
Project period: 12/01/2024 - 11/30/2027
- “EARLIER Tier III/RF: Beckman25 - Bhattacharya
Amount - \$26,000
Sponsoring Agency: Arnold and Mabel Beckman Foundation
co-PI: Aniket Bhattacharya
Project period: 04/01/2025 - 03/31/2030

Awarded Proposals

- “DNA barcoding via multi-scan and step control in dual-pore tug-of-war” - \$126,522
Sponsoring Agency: NIH-(Subcontract from McGill University)
PI: Aniket Bhattacharya Project period: 09/01/2020 - 05/31/2024
- “The Bouncing Barrier Problem in Planet Formation”
Sponsoring Agency: Florida Space Grant Consortium
PIs: Aniket Bhattacharya (80%) & Joshua Colwell (20%)
Project period: 08/15/2017 - 08/14/2020; 80% (\$19,822.00) of total amount \$24,778.00
- “Mitigation of Air Leaks in LH2 Tanks” - \$15,250.00
Agency: National Space Grant Foundation: 01/05/2015-05/31/2016

PI: Aniket Bhattacharya

- “Mitigation of Air Leaks in LH2 Tanks” - \$11,250.00

Agency: National Space Grant Foundation: 01/12/2015-04/15/2015

PI: Aniket Bhattacharya

- “Mitigation of Air Leaks in LH2 Tanks” - \$2,250.00

Agency: National Space Grant Foundation: 01/12/2015-04/15/2015

PI: Aniket Bhattacharya

- “Phase Coexistence and Transport of Fluid in Porous Media” - \$3,675.00

Florida Space Institute/Florida Space Grant Consortium (FSGC): 09/01/2014 to 05/07/2015

PI: Aniket Bhattacharya

- UCF College of Science SEED grant - \$10,000 (May 2012-Dec 2013)

“Challenges in Computational Statistical Mechanics”

PI: Aniket Bhattacharya

- “Electroless Metalization onto Polymeric Surfaces: Synthesis, Analysis, and Modeling for Achieving Controlled Nanoscale Morphologies”,

The National Science Foundation (NSF-CHEM): \$504,854.00 (July 2008 - June 2011)

Co-PI (25%) with Stephen Kuebler and Prof. Helge Heinrich

- “Self-Assembly of Magnetic Nanostructures and Related Enabling Technologies”

The National Science Foundation (NSF-NIRT): \$1200,000.00 (August 2001 - July 2006)

Co-PI (25%) with Weili Luo, and K. Belfield.

- Student Fellowship

- Los Alamos National Laboratory Summer Research Fellowship \$12,000.00
Awarded to my PhD student Swarnadeep Seth (June 2019 - August 2019).

- “A random walk model of social distancing to mitigate COVID-19 spread” \$2000
A Summer 2020 Research Fellowship awarded to Ronit Agarwala to conduct research on COVID-19 spread.

- “A Simple Two Dimensional Model of Cell Migration in an Extracellular Matrix Environment” STEM Fellowship \$3000 - Awarded to Biomedical Science undergraduate Mohammad Usman - Spring 2018

- Foreign research collaboration related travel support and local expenses:

Finnish Academy (local host Prof. Tapio Ala-Nissila) ~\$ 40,000.00 (7-8 trips)

Deutsche Forschungsgemeinschaft (local host Prof. Binder)~\$ 30,000.00 (9-10 trips)

(Listed as a Foreign Collaboration in Prof. Binder’s and Prof. Ala-Nissila’s grant)

- UCF Start up grant: \$70,000.00 (August 2000-June 2002)

- UCF Presidential matching fund for major equipment: \$5000.00 (2001)

Funding related to teaching, pedagogy and course development

- “Introductory Physics for Life Sciences” \$17,000.00[‡]

Agency: Helmsley Charitable Trust[‡]: 09/06/2016-10/15/2016

PI: Aniket Bhattacharya Co-PIs: Lawrence von Kalm (UCF-Biology), Elena Flitsiyan (UCF-Physics), Gauri

Pradhan (USF - Physics), and Gerald Woods (USF - Physics).

- “Helmsley Faculty Learning Community” \$1000.00[‡]
Agency: Helmsley Charitable Trust[‡]: 9/15/2016-10/15/2016

[‡]Part of \$500,000 planning grant awarded to Florida Consortium (FLC) of Metropolitan Universities (UCF, USF, and FIU) from the Helmsley Charitable Trust

- UCF Undergraduate Teaching Equipment Grant: \$3635.00 (2005).
- “An interdisciplinary Undergraduate program in Nanoscience and Nano-Engineering”
The National Science Foundation(NSF-NUE): \$100,000.00 (July 2003 - December 2004)
Co-PI (20%) with Sudipta Seal, Beverly Regezinsgky, Craig Sider, and Elliot Vittes.

RESEARCH COLLABORATORS

Late Prof. Kurt Binder, Institut for Physics, Johannes Gutenberg University, Germany
Prof. Andrey Milchev, Bulgarian Academy of Sciences, Bulgaria
Prof. Tapio Ala-Nissila, Dept. of Applied Physics, Aalto University, Espoo, Finland
Prof. See-chen Ying, Physics Department, Brown University, Providence, RI, USA
Prof. Wokyung Sung, Dept. of Physics, POSTECH & Asia Pacific Center, Pohang, South Korea
Prof. Mikko Karttunen, The University of Western Ontario, Canada
Prof. Sanat Kumar, Columbia University, New York, USA
Prof. Walter Reisner, McGill University, Canada
Prof. Robert Sladek, McGill University, Canada
Prof. Peter Virnau, Institute for Physics, Johannes Gutenberg University, Germany
Dr. H.-P Hsu, Institut for Physics, Johannes Gutenberg University, Germany
Prof. William Dunbar, Nooma Bio Inc., Santa Cruz, CA, USA
Dr. Arthur Rand, Oxford Nanopore, UK
Prof. Kaifu Luo, University of Science and Technology of China, Hefei, P. R. China
Dr. Ramesh Adhikari, The University of Texas at Austin, USA
Dr. Swarnadeep Seth, Virginia Polytechnic Institute and State University, USA

RESEARCH SUPERVISION & MENTORING

Actively and continuously involved in mentoring research of graduate, undergraduate, high school and REU students and visiting researchers from other institutions funded by NSF, NASA, NIH, UCF STEM funds, and Foundation grants.

- **Graduate Advisees:** Swarnadeep Seth, Tyler Campbell, Stephanie Jarmak, Aiqun Huang, Ramesh Adhikari, Angela Krenn, Philip Metzger, George Bourov, Vincent Maycock, Christopher J. Lorsch, Abdelillah Y. Ouazzani, Coleman Cariker, Timo Ikonen (Aalto University)
- **Undergraduate Advisees:** Brandon Stine, Jonathan Sar-Shalom, Mason Cessna, Ronit Agarwal, Mohammad Usman, Theodore Cox, Katrina Cook, Rachel Scime, Sabrina Scime, Sohng Gandhi, Sergio Tafur, Heath Morrison, John Heyes, Anthony Robledo, Nathaniel Tukdarian, and many others
- **Other graduate and post-doctoral advisees at other institution:** Prof. Kaifu Luo (Helsinki University of Technology), Dr. Timo Ikonen (Helsinki University of Technology), Dr. Monojoy Goswami (The Rensselaer Polytechnic Institute).
- **High school advisee:** Mark White, Amrit Vignesh
- **REU advisees:** Gayle Tanner, Kirstin Purdy, Daniel Bridges

SERVICES:

- **Physics Graduate Coordinator (program director)** Fall 2006 - Fall 2009
During these 3 years the physics graduate program at UCF underwent substantial growth both in terms of number of graduate students (more than double), quality, and diversity.
- **Physics Committee Chair:**
 - Physics Lecturer Search Committee (FA 2024)
 - Graduate Curriculum and Affairs committee (Fall 2016 - present);
 - Graduate Admission Committee (Fall 2006 - Fall 2008)
 - Graduate Candidacy Examination Committee (2002-2006)
 - Physics Colloquium Committee (2002-2003)
 - Physics Curriculum Committee (2014-15)
- **Physics Committee Member (Department):**
 - Physics Undergraduate Committee (2012-2015);
 - Physics Nano-Bio search committee (2009);
 - Graduate Curriculum and Affairs committee (Fall 2007 - 2009);
 - Graduate Admission committee (Fall 2006 - 2009,2012,2013,2014);
 - New faculty search Committee (2002 & 2003);
 - Graduate Committee (2000-2005);
 - Physics Colloquium Committee (2001-2004);
 - Physics Building Committee (2004-2005);
 - PHY2048/PHY2049 Text Book review Committee (Spring 2005);
 - Computer & Technology Committee (2002-2006);
 - Library Liaison (2001-2003);
 - Physics Web-master (2004-2005).
- **College of Sciences (COS) Committee Chair:**
 - COS Tenure and Promotion Committee (2023-2024)
- **College of Sciences (COS) Committee Member:**
 - COS Tenure and Promotion Committee (2022-2023)
 - Mathematics 5 Year Chair Review Committee (2019)
 - COS committee for graduate studies and research (2006-2009, 2016-present)
 - COS Research Committee: Excellence in Research Award 2017
 - COS Sabbatical Committee (2013-2014, 2014-2015);
 - COS TIP (Teaching Incentive program) committee (2007,2008).
- **Service to the University:**
 - Research Conflict of Interest Committee (RCOIC) (member - appointed by the Provost)

REVIEWER OF SCIENTIFIC JOURNALS

Nature Physics, Nature Nanotechnology, Nature Materials, Proceedings of the National Academy of Sciences (PNAS), USA, Soft Matter, Physical Review Letters, Physical Review E, Journal of Chemical Physics, Journal of Physics: Condensed Matter, Euro Physics Letters (EPL), European Journal of Physics E, Langmuir, Macromolecules, Physical Chemistry-Chemical Physics (PCCP) and other journals.

REVIEWER OF SCIENTIFIC PROPOSALS:

Panelist and regular reviewer to the National Science Foundation proposals; Fundamental Onderzoek der Materie(FOM), The Netherlands; U.S. Civilian Research & Development Foundation (CRDF); Israel National Science Foundation; The National University of Singapore

SEMINARS & INVITED TALKS

54. *"Brownian dynamics simulation of genome alignment"* Seminar, Nooma Bio, Inc. CA, USA (February 2022).
53. *"Characteristics of flossing a DNA through a nanopore device"* Colloquium, Department of Physics, Florida International University, Miami, Florida, USA, October 6, 2021.
52. *"Some characteristics of biopolymer translocation through a solitary and a dual nanopore device: results from simulation studies"*, Talk presented at a CECAM workshop entitled *Nanopore Translocation and Nanochannel Confined Biopolymers: bridging theory and experiments*, September 8, 2021 - September 10, 2021, SISSA, Trieste, Italy.
51. *"DNA folds inside a Nanochannel: scaling and non-equilibrium dynamics"* Talk presented at SISSA, Trieste, Italy, June 2019.
50. "DNA folds and nonequilibrium dynamics inside a Nanochannel" Talk presented at Institute for Physics, Johannes Gutenberg University, Mainz, Germany, June 2019.
49. *"Some aspects of a two-pore translocation problem"*, Talk presented at the 32nd Annual CSP workshop on Recent Developments in Computer Simulation Studies in Condensed Matter Physics February 18 - 22, 2019, organized by David Landau and Steven Lewis
48. *"DNA folds and dynamics squeezed inside a nano-channel with a sliding gasket"*, Center for Nonlinear Studies, Los Alamos National Laboratory, New Mexico, June 4, 2018
47. *"DNA conformations and dynamics squeezed inside a nano-channel with a sliding gasket"*, Colloquium, Department of Mechanical Engineering, Northwestern University, Evanston, May 01, 2017.
46. *"DNA folds and non-equilibrium dynamics inside a Nanochannel"* Florida Chapter of the American Chemical Society, May 05 - 07 (2016),
45. *"DNA Dynamics, Melting, and Barcodes inside a Nanochannel"*, Condensed Matter Seminar, Physics Department, McGill University, Canada, Oct 22, 2015.
44. *"Characteristics of heteropolymer translocation through a nanopore"*, Surmounting the insurmountable - Pathways of Biological Physics: An international Conference, Asia Pacific Center for Theoretical Physics and POSTECH, South Korea, August 28 - August 30 (2014).
43. *"Universal monomer dynamics of a two dimensional semi-flexible chain"*, Institut for Physics, Johannes Gutenberg University, Germany, October, 2013.
42. *"Emerging Physical Picture of DNA Dynamics Through a Nanopore"*, CECAM Workshop on Polymer Translocation through nanopore, Sept 16 - Sept 18, 2012.
41. *"How does a DNA translocate through a nanopore ?"*, Condensed Matter Seminar, Kansas State University, April 02 (2012).
40. *"Some aspects of polymer translocation dynamics through nanopore: comparison of recent the theories with simulation results"*, APS March Meeting 2012 Focus Session: Translocation through Nanopores - Novel Devices and Computational Approaches, Feb 27 - MARCH 2012, Boston, MA.

39. *"Effects of cis-trans asymmetry on Polymer Translocation through Nano pores"*, NCBI (National Center for Biotechnology Information) Computational Biology Branch, National Library of Medicine, National Institute of Health, Bethesda, Maryland, August 11, 2011.
38. *"Effects of cistrans asymmetry on Polymer Translocation through Nano pores"* Center for Biological and Materials Physics, Florida Atlantic University, September, 2010.
37. *"Polymer translocation through a nano-pore: scaling, universality and prospective application"* Technical University of Munich: Modern topics in bio-soft matter, May 2009.
36. *"Some aspects of forced polymer translocation through a nano-pore"* Institut for Physics, Johannes Gutenberg University, Germany, May 2009.
35. *"Simulation studies of DNA translocation trough nanopore"* Invited talk at the Focused session , APS March Meeting, March 17-21, 2009, Pittsburgh, PA.
34. *"On universal aspects of forced polymer translocation through a nano-pore"* Presented at the workshop on Computer Simulation Studies in Condensed Matter Physics, Athens, GA, February 2009.
33. *"DNA dynamics in Protein and Silicon Nanopore"* Institut for Physics, Johannes Gutenberg-University, Germany, August 2008.
32. *"DNA dynamics in Protein and Silicon Nanopore"* Invited talk at the Focused session on Computational Nanoscience, APS March Meeting, March 5-9, 2007, Denver, CO.
31. *"DNA dynamics in Protein and Silicon Nanopore"* Colloquium, Department of Physics, Florida Atlantic University, Boca Raton, Florida, March 30, 2007.
30. *"DNA dynamics in Protein and Silicon Nanopore"* Condensed Matter Seminar, Department of Physics, Brown University, Providence, Rhode Island, April 30, 2007.
29. *"Morphology and Dynamics of Ionomers"* Presented at the Florida Materials Simulation Workshop, University of South Florida, Tampa, May 2007.
28. *"DNA transport through protein and synthetic nanopore: theory meets experiment"* UCF, Department of Chemistry weekly seminar October, 2007.
27. *"DNA dynamics in Protein and Silicon Nanopore"* Helsinki University of technology, Helsinki, Finland, August, 2006.
26. *"DNA dynamics in Protein and Silicon Nanopore"* The Saha Institute of Nuclear Physics, Kolkata, India, June, 2006.
25. *"DNA dynamics in Protein and Silicon Nanopore"* Colloquium, Physics Department, University of South Florida, Jan 20, 2006.
24. *"Morphology and Dynamics of Structured Molecules"* Weekly Seminar, Department of Chemical and Biological Engineering, Florida State University Tallahassee, Nov 18, 2005.
23. *"DNA dynamics in Nanopore"* UCF Biophysics Seminar, Nov 17, 2005.
22. *"DNA dynamics in Nanopore"* SPS and recruitment Seminar, University of North Florida, Jacksonville, Sept 30, 2005.

21. *"Morphology and dynamics of soft structured molecules"*
Invited talk presented at **Materials simulators Workshop**, organized by the Materials Science Department., University of Gainesville, Florida, Aug 18-19, 2005.
20. *"Morphology and dynamics of soft structured molecules"*
UCF, Department of Physics Colloquium, Orlando, April 2005.
19. *"Phase Ordering Dynamics of polymers in solution"*,
Rensselaer Polytechnic Institute, Troy, New York, May 2004.
18. *"Of Micelles & Membranes: results from large scale simulation"*,
UCF BMSC Colloquium, Jan 2004.
17. *"Phase Ordering Dynamics in Macromolecules"*
UCF, Department of Mathematics Colloquium, Nov 2003.
16. *"Self-Assembly of Amphiphiles: Comparison of Simulation Results from Different Models and Methods"*, Talk presented at the 16th Annual Workshop Computer Simulation Studies in Condensed Matter Physics organized by the Center of simulation physics, The University of Georgia, Athens, GA, February 23-27, 2003.
15. *"Self-Assembly and Pattern Formation in Soft Matter"*,
Colloquium: Florida Institute of Technology, October, 2001.
14. *"A Random walk in Polymer Physics"*,
Applied Physics Division, Kettering University, Flint, MI 48504-4898, September, 1999.
13. *"Self-Assembly of Amphiphiles"*,
Science Research Laboratory, Ford Motor Company, Dearborn, Michigan, May, 1999.
12. *"Self-Assembly of Amphiphiles"*,
San Diego State University, Department of Physics Colloquium, February, 1999.
11. *"Micellization of Surfactants and Co-operative Self-Assembly"*,
Johannes Gutenberg-Universität, Germany, August, 1998.
10. *"Micellization of Surfactants and Co-operative Self-Assembly"*,
Michigan State University, Brown Bag Seminar, October, 1997.
9. *"Numerical simulation of spin echo diffraction in disordered media with single length scales"*,
Michigan State University, Condensed Matter Seminar, October 1996.
8. *"Diffusion and Magnetic relaxation in computer generated model porous media"*,
Access in Nano-porous media Symposium, June 7-9, 1995, Michigan State University, East Lansing, Michigan.
7. *"Non-equilibrium Dynamics of Bose Gas"*,
23rd Midwest Solid State Theory Symposium, Manhattan, Kansas, October 14-15 (1995).
6. *"Dynamics of phase ordering in restricted geometries"*,
Department of Physics, University of California, Davis, February, 1995.
5. *"An overview of Quantum Monte Carlo methods; few "exact" results"*,
Kansas State University, February, 1995.
4. *"An overview of Quantum Monte Carlo methods; few "exact" results"*,
Michigan State University, March, 1995.

3. *“Exact Quantum Monte Carlo results for many fermion systems”*,
The Saha Institute of Nuclear Physics, Calcutta, India, January, 1995.
2. *“Quantum Monte Carlo results for an extended multi-band Hubbard model for oxide superconductors”*,
Tata Institute of Fundamental Research, Bombay, India, December, 1994.
1. *“Dynamics of phase transition in restricted geometries”*,
Department of Physics, Michigan State University, May, 1994.

CONTRIBUTED TALKS & POSTERS

102. Swarnadeep Seth & Aniket Bhattacharya, *“Accelerating Missense Mutation Identification in Intrinsically Disordered Proteins using Deep Learning”*, Session B59 - Intrinsically Disordered proteins, APS 2024 March Meeting, March 04-08, 2024, Minneapolis, MN, USA
101. Aniket Bhattacharya, Brandon Stine, & Swarnadeep Seth *“Fine Structures of Intrinsically Disordered Proteins”*, Session B59 - Intrinsically Disordered proteins, APS 2024 March Meeting, March 04-08, 2024, Minneapolis, MN, USA
100. Brandon Stine, Aniket Bhattacharya, & Swarnadeep Seth, *“Comparison of results from different coarse-grained models of Intrinsically Disordered Proteins”*, Session B59 - Intrinsically Disordered proteins, APS 2024 March Meeting, March 04-08, 2024, Minneapolis, MN, USA
99. Swarnadeep Seth and Aniket Bhattacharya, *“Analysis of the role of co- and counter-ions on the current blockade maps of a dsDNA construct translocating through a nanopore using Electro Kinetic Brownian Dynamics”*, Poster presented at the CECAM workshop *Nanofluidics in Physics and Biology*, ENS de Lyon, France, September 10 - 13 (2023).
98. Arthur Rand, Philip Jimmy, William Dunbar, Swarnadeep Seth, Aniket Bhattacharya, Zezhou Liu, Xavier Cpaldi, Wangwei Dong, Robert Sladek, and Walter Reisner, *“Expanding the use and understanding of Dual-Nanopore Technology for single molecule genomics”*, Poster presented at the NHGRI AGDT meeting, San Diego, CA June 6 - 8 (2023).
97. Aniket Bhattacharya & Swarnadeep Seth,
“Modeling current blockade in a dual nanopore device” Session V-9 Molecular Biophysics, APS 2023 March Meeting (Virtual), March 20, 2023
96. Joshua Ashby, Swarnadeep Seth, and Aniket Bhattacharya,
“Physical characteristics of some intrinsically disordered proteins from simulation studies using mesoscale models”, Session N-14, Intrinsically Disordered proteins and non-equilibrium Processes, APS 2023 March Meeting, March 06-10, 2023, Las Vegas, USA.
95. Swarnadeep Seth and Aniket Bhattacharya, *“Electrokinetic Brownian dynamics of current blockade of a dsDNA through a nanopore”*, Session W04: Single-Molecule Characterization in Polymers and Soft Matter: Topology and Transport, APS 2023 March Meeting, March 06-10, 2023, Las Vegas, USA.
94. Jacob Bair and Aniket Bhattacharya
“Transverse fluctuations and conformations of a semi-flexible chain in a crowded environment”
APS March Meeting March 14 - 18, 2022, Chicago, USA.
93. Swarnadeep Seth, Arthur Rand, Walter Reisner, Robert Sladek and William B. Dunbar, and Aniket Bhattacharya
“Simulation studies of nonequilibrium dynamics of charged motifs in a dual nanopore”
APS March Meeting March 14 - 18, 2022, Chicago, USA.

92. Swarnadeep Seth, Arthur Rand, Walter Reisner, Rob Sladek, William B. Dunbar, and Aniket Bhattacharya
"A comparison of experimental bacterial genome mapping data with results from simulation using a coarse-grained dsDNA construct"
 APS March Meeting March 14 - 18, 2022, Chicago, USA.
91. Xavier Capaldi, Arthur Rand, Philip Zimny, Ronald Nagel, Chaitra Telang, Justin Mollison, Aaron Bruns, Emily Leff, An Vuong, Swarnadeep seth, Aniket Bhattacharya, William Dunbar and Walter Reisner,
"Genome Mapping using a Dual Nanopore Device"
 APS March Meeting March 14 - 18, 2022, Chicago, USA.
90. Ronit Agarwala and Aniket Bhattacharya,
"A random walk model of social distancing to mitigate COVID-19 spread"
 APS March Meeting March 15 - 19, 2021 (Virtual).
89. Swarnadeep Seth, An Vuong, Walter Reisner, Willima Dunbar, and Aniket Bhattacharya,
"Decoding DNA barcodes using a Cylindrical Nanopore"
 APS March Meeting March 15 - 19, 2021 (Virtual).
88. Aniket Bhattacharya and Swarnadeep Seth,
"Decoding DNA barcodes using a Cylindrical Nanopore"
 APS March Meeting March 15 - 19, 2021 (Virtual).
87. Walter Reisner, An Vuong, Xavier Capaldi, Swarnadeep Seth, Philip Zimmy, Roland Nagel, Aniket Bhattacharya, and William Dunbar,
"DNA Flossing in a Dual Pore Device"
 APS March Meeting March 15 - 19, 2021 (Virtual).
86. Jan Rotheri, Peter Virnau, and Aniket Bhattacharya
"Knot dynamics of a DNA strand pushed inside a nanochannel "
 APS March Meeting, March 2 – 6, 2020 (Virtual) .
85. Aniket Bhattacharya and Swarnadeep Seth
"In silico studies of "DNA Flossing" through a Double-Nanopore system "
 APS March Meeting, March 2 – 6, 2020 (Virtual).
84. Peter Smucz, Swarnadeep Seth, and Aniket Bhattacharya
"Pulling a DNA through a Double-Nanopore system: A Brownian Dynamics Study "
 APS March Meeting, March 2 – 6, 2020 (Virtual) .
83. Aniket Bhattacharya and Swarnadeep Seth
"A "Tug-of-War" in a three dimensional Double-Nanopore system"
 APS March Meeting, March 2 – 6, 2020 (Virtual) .
82. Simon Bernier, Walter Reisner, and Aniket Bhattacharya
"Evolution of Nested Folding States in Compression of a Strongly Confined Semiflexible Chain"
 APS March Meeting, March 5–9, 2018; Los Angeles, California, USA.
81. Towfiq Ahmed, Swarnadeep Seth, and Aniket Bhattacharya
"Multiscale Modeling of DNA Translocation through Multiple Nanopores "
 APS March Meeting, March 4–8, 2019; Boston, Massachusetts, USA.
80. Swarnadeep Seth, Walter Reisner, William B Dunbar, and Aniket Bhattacharya
"Brownian Dynamics studies of a "Tug-of-War" of a DNA translocating through a two-nanopore system"
 APS March Meeting, March 4–8, 2019; Boston, Massachusetts, USA.

79. Eric Switzer and Aniket Bhattacharya
"Scaling relations for the continuum limit from collisions between nanoclusters and rough surfaces"
 APS March Meeting, March 4–8, 2019; Boston, Massachusetts, USA.
78. Tyler Campbell, Aniket Bhattacharya, and Walter Reisner
"DNA dynamics squeezed inside a nano-channel with a sliding gasket"
 APS March Meeting, March 13-17, 2017 New Orleans, Louisiana, USA.
77. Sabrina Scime, Rachel Scime, Claudia Andl, and Aniket Bhattacharya
"Understanding Patterns of Tumor Cell Invasion in Organotypic Reconstruct Cultures Using Cluster Analysis Algorithms"
 UCF Showcase for Undergraduate Research, April 06, 2017.
76. Theodore Cox, Julie Brisset, Joshua Colwell, and Aniket Bhattacharya,
"Collisions of Lennard-Jones Clusters,"
 UCF Showcase for Undergraduate Research, April 06, 2017.
75. Aniket Bhattacharya, Aiqun Huang, and Walter Reisner
"Non-Equilibrium Dynamics of Nano-channel Confined DNA: A Brownian Dynamics Simulation Study"
 APS March Meeting, March 14-18, 2016 Baltimore, MD, USA.
74. Ramesh Adhikari and Aniket Bhattacharya,
"Influence of solvent viscosity on translocation of semi-flexible polymer through a nano-pore",
 Graduate Research Forum, UCF, March 31, 2015.
73. Aiqun Huang and Aniket Bhattacharya *"Conformations of double stranded DNA: the effect of breathing bubbles"*
 UCF Graduate Research Forum, March 31, 2015, Orlando, Florida, USA
72. Nathaniel Tukdarian, Aiqun Huang, Ramesh Adhikari, Aniket Bhattacharya,
"Dynamics of a fluctuating semi-flexible membrane"
 UCF Showcase of Undergraduate Research Excellence, Orlando, April 2, 2015
71. Ramesh Adhikari and Aniket Bhattacharya,
"Conformations and dynamics of a translocating semi-flexible chain through a Nano-pore facilitated by chaperones"
 APS March Meeting, March 2-6, 2015; San Antonio, Texas, USA.
70. Ramesh Adhikari and Aniket Bhattacharya,
"Effect of solvent viscosity on driven translocation of a semi-flexible polymer through a nanopore"
 APS March Meeting, March 2-6, 2015; San Antonio, Texas, USA.
69. Hsiao-Ping Hsu, Aiqun Huang, Aniket Bhattacharya, and Kurt Binder,
"Universal aspects of conformations and transverse fluctuations of a two-dimensional semi-flexible chain"
 APS March Meeting March 2-6, 2015; San Antonio, Texas, USA.
68. Nathaniel Tukdarian, Aiqun Huang, Ramesh Adhikari, Aniket Bhattacharya,
"Dynamics of a fluctuating semi-flexible membrane"
 APS March Meeting March 2-6, 2015; San Antonio, Texas, USA.
67. A. Krenn, S. Starr, R. Youngquist, M. Nurge, J. Sass, J. Fesmire, C. Cariker and A. Bhattacharya,
"The safe removal of frozen air from the annulus of an LH2 storage tank"
 2015 Cryogenic Engineering Conference and International Cryogenic Materials Conference, Tucson, Arizona, June 28 - July 02, 2015.

66. Ramesh Adhikari and Aniket Bhattacharya,
"Translocation of semi-flexible polymer through a nano-pore assisted by binding particles"
 Graduate Research Forum, UCF, April 1, 2014.
65. Aiqun Huang, Aniket Bhattacharya and Kurt Binder *"Conformations, transverse fluctuations and crossover dynamics of a semi-flexible chain in two dimensions"*, UCF Graduate Research Forum, April 1, 2014, Orlando, Florida, USA
64. Aiqun Huang and Aniket Bhattacharya,
"Conformations of double stranded DNA: the effect of breathing bubbles"
 APS March Meeting March 2-6, 2015; San Antonio, Texas, USA.
63. Ramesh Adhikari and Aniket Bhattacharya,
"Driven translocation of Polymer through a nanopore: effect of heterogeneous flexibility",
 APS March meeting 2014, March 3-7, 2014; Denver, Colorado, USA.
62. Aniket Bhattacharya, Aiqun Huang, and Kurt Binder,
"Universal Crossover Dynamics of a Semi-Flexible Polymer in Two Dimensions",
 APS March meeting, March 3-7, 2014; Denver, Colorado, USA.
61. Aiqun Huang, Aniket Bhattacharya, and Kurt Binder,
"Conformations and Transverse Fluctuations of a Semi-Flexible Chain in Two Dimensions",
 APS March meeting 2014, March 3-7, 2014; Denver, Colorado, USA.
60. Aniket Bhattacharya,
"College Physics in Studio and Standard Classroom Environment",
 Poster presented at the AAPT meeting *"Introductory Physics for Life Sciences"*, Arlington, VA, Feb
 16-18, 2014.
59. Ramesh Adhikari and Aniket Bhattacharya,
"How tension propagates for a driven semi-flexible chain while translocating through a nano-pore"
 APS March Meeting, March 18-22, 2013; Baltimore, Maryland, USA.
58. Aiqun Huang and Aniket Bhattacharya,
"Fluctuations and structural transitions of confined biopolymers"
 APS March Meeting, March 18-22, 2013; Baltimore, Maryland, USA.
57. Aniruddha Dutta, Biao Yuan, Helge, Christopher J. Clukay, Chris Grabill, Helge Heinrich, Aniket
 Bhattacharya, and Stephen Kuebler, *"Quantification of metallic nanoparticle morphology with tilt se-
 ries imaging by transmission electron microscopy"*
 APS March Meeting 2012, Feb 27 - March 02, Boston, Massachusetts, USA.
56. Stephen Kuebler, Aniruddha Dutta, Christopher J. Clukay, Chris Grabill, Helge Heinrich, and Aniket
 Bhattacharya,
"Morphologies of an anisotropic diffusion limited growth model to study electroless deposition"
 APS March Meeting 2012, Feb 27 - March 02, Boston, Massachusetts, USA.
55. Ramesh Adhikari, Andy W.C. Lau and Aniket Bhattacharya,
"Translocation dynamics of a semi-flexible chain through a nano-pore"
 APS March Meeting 2012, Feb 27 - March 02, Boston, Massachusetts, USA.
54. Timo Ikonen, Tapio Ala-Nissila, Aniket Bhattacharya, and Wokyung Sung,
"Non-equilibrium tension propagation as a unifying description of driven polymer translocation", APS
 March Meeting 2012, Feb 27 - March 02, Boston, Massachusetts, USA.

53. Aniket Bhattacharya, Tapio Ala-Nissila, and Wokyung Sung,
"Polymer translocation facilitated by Chaperones",
 APS March Meeting 2011, March 21–25, 2011; Dallas, Texas, USA.
52. Timo Ikonen, Tapio Ala-Nissila, Aniket Bhattacharya, and Wokyung Sung,
"A Coupled-Dynamics Model for Polymer Translocation",
 APS March Meeting, March 21-25, 2011; Dallas, Texas, USA.
51. Stephen M. Kuebler and Aniket Bhattacharya,
"Simulation studies of diffusion limited ballistic growth of particles from a surface"
 APS March Meeting, March 21-25, 2011; Dallas, TX, USA.
50. Aniruddha Dutta, Helge Heinrich, Stephen Kuebler, Chris Grabill, and Aniket Bhattacharya,
"Quantitative Transmission Electron Microscopy of Nanoparticles and Thin-Film Formation in Electroless Metalization of Polymeric Surfaces"
 APS March Meeting, March 21-25, 2011; Dallas, TX, USA.
49. C. J. Clukay, D. J. Freppon, C. N. Grabill, A. Dutta, H. Heinrich, A. Bhattacharya, and S. M. Kuebler,
"Characterization of gold nanoparticles generated in situ on a negative-photoresist polymer substrate"
 Beckman Scholars and Beckman Young Investigators Symposium (Irvine, CA, 11-13 August 2011, 2011).
48. C. Clukay, D. Freppon, C. Grabill, S. M. Kuebler, A. Bhattacharya, A. Dutta, and H. Heinrich, *"Effect of select chemical components on the morphology of electrolessly deposited silver"*, UCF Showcase of Undergraduate Research (Orlando, FL, 1 April 2011, 2011).
47. Mike Lively, Aniket Bhattacharya, Chris Grabill, Stephen M. Kuebler, Aniruddha Dutta, and Helge Heinrich,
"Simulation studies of electroless metal deposition using gold nano-clusters on polymeric surfaces"
 APS March Meeting, March 15-19, 2010; Portland, Oregon, USA.
46. Aniket Bhattacharya, Christopher Lorsch, Tapio Ala-Nissila, and Wokyung Sung,
"Dynamics of polymer translocation rectified by attractive binding particles"
 APS March Meeting, March 15-19, 2010; Portland, OR, USA.
45. *"Rectified polymer translocation induced by solvent asymmetry between cis and trans compartments"*
 Christopher Lorsch, Aniket Bhattacharya, and Tapio Ala-Nissila,
 APS March Meeting, March 15–19, 2010; Portland, OR, USA.
44. *"Out of Equilibrium Characteristics of a Forced Translocating Chain through a Nanopore"*
 Aniket Bhattacharya and Kurt Binder,
 APS March Meeting, March 15-19, 2010; Portland, Oregon, USA.
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24. Karlo Kitanovski, George Bourov, and Aniket Bhattacharya
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20. Hong Liu, Aniket Bhattacharya, and Amitabha Chakrabarti,
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