

CHARLES M. SCHROEDER III

Ray and Beverly Mentzer Professor
Department of Materials Science and Engineering
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AFFILIATIONS

Department of Chemical & Biomolecular Engineering
Department of Materials Science and Engineering
Beckman Institute for Advanced Science and Technology (Full-time)
Center for Biophysics and Quantitative Biology
Department of Chemistry (affiliate)
Department of Bioengineering (0% appointment)
Materials Research Lab (MRL) (0% appointment)
Carl R. Woese Institute for Genomic Biology / Biosystems Design (affiliate)
University of Illinois at Urbana-Champaign, Urbana, IL

RESEARCH INTERESTS

Soft matter, single polymer dynamics, vesicle dynamics, molecular rheology
Self-assembly, DNA data storage, automated synthesis for materials discovery
Single molecule charge transport & electrochemistry, single molecule biophysics

EDUCATION

- Ph. D. Chemical Engineering, **Stanford University**, Stanford, CA, 2005.
Thesis title: *Investigating Polymer Physics with Single Molecule Experiments and Brownian Dynamics Simulations*
Thesis advisors: Eric S. G. Shaqfeh and Steven Chu
- M. S. Chemical Engineering, **Stanford University**, Stanford, CA, 2001.
- B. S. Chemical Engineering, **Carnegie Mellon University**, Pittsburgh, PA, 1999.
with University Honors

PROFESSIONAL EXPERIENCE

- 8/20-present Ray and Beverly Mentzer Professor
Department of Materials Science and Engineering
Department of Chemical & Biomolecular Engineering
University of Illinois at Urbana-Champaign, Urbana, IL, 61801
- 8/18-present Co-Leader, Molecular Science and Engineering (Research Theme)
Leader, Molecular Design & Engineering (Research Group)
Beckman Institute for Advanced Science and Technology
University of Illinois at Urbana-Champaign, Urbana, IL, 61801
- 8/17-9/19 Professor and Ray and Beverly Mentzer Faculty Scholar
Department of Chemical & Biomolecular Engineering
University of Illinois at Urbana-Champaign, Urbana, IL, 61801
- 1/17-5/17 Visiting Associate, Division of Chemistry and Chemical Engineering
California Institute of Technology, Pasadena, CA, 91125
- 8/14-8/17 Associate Professor, Department of Chemical & Biomolecular Engineering
University of Illinois at Urbana-Champaign, Urbana, IL, 61801

- 8/08-8/14 Assistant Professor, Department of Chemical & Biomolecular Engineering
University of Illinois at Urbana-Champaign, Urbana, IL, 61801
- 12/07-7/08 Postdoctoral Fellow, Department of Chemical Engineering
University of California, Berkeley, Berkeley, CA, 94720
- 11/04-11/07 Postdoctoral Fellow, Department of Chemistry and Chemical Biology (Xie Group)
Harvard University, Cambridge, MA 02138
- 3/00-11/04 Graduate Research Assistant, Department of Chemical Engineering
Stanford University, Stanford, CA 94305
- 5/99-8/99 Research Engineer Intern, Chemical/Mechanical Polish, Fab 15 (Summer 1999)
Intel Corporation, Portland, OR 97007
- 5/98-8/98 Research Engineer Intern, Photolithography, Fab 15 (Summer 1998)
Intel Corporation, Portland, OR 97007
- 5/97-5/99 Research Assistant, Department of Chemical Engineering, Jhon/Tilton Groups
Carnegie Mellon University, Pittsburgh, PA 15213

HONORS AND AWARDS

- 2019 Society of Rheology Publication Award
- 2019 Ray & Beverly Mentzer Professor
- 2014 Beckman Fellow, Center for Advanced Study, University of Illinois
- 2013 Camille & Henry Dreyfus Teacher-Scholar Award
- 2013 Dean's Award for Excellence in Research, College of Engineering, University of Illinois
- 2013 NSF CAREER Award, National Science Foundation
- 2012 Arthur B. Metzner Early Career Award, Society of Rheology
- 2012 U.S. Frontiers of Engineering, National Academy of Engineering
- 2011 Packard Fellowship, David & Lucile Packard Foundation
- 2008 Tomorrow's PI, *Genome Technology* magazine
- 2008 List of Teachers Ranked as Excellent, University of Illinois, F'08, S'11
- 2006 NIH Pathway to Independence Award (K99/R00)
- 2005 Jane Coffin Childs Memorial Fund for Medical Research Postdoctoral Fellowship
- 2003 Gerald J. Lieberman Fellowship, Stanford University
- 1999 National Science Foundation (NSF) Graduate Fellowship
- 1999 Stanford Graduate Fellowship (SGF), Stanford University
- 1999 University Honors, Carnegie Mellon University
- 1998 Andrew Carnegie Scholar, Carnegie Mellon University
- 1998 Phi Kappa Phi Honor Society
- 1997 Donald F. Othmer Academic Excellence Award, AIChE

PEER REVIEWED PUBLICATIONS

84. C. D. Young, Y. Zhou, C. M. Schroeder, C. E. Sing, "Dynamics and Rheology of Semidilute Solutions of Ring-linear Polymer Blends in Planar Extensional Flow", arXiv:2011.01386 (2020).
83. S. Li, H. Yu, B. Li, J. S. Moore, C. M. Schroeder, "Regulating Charge Transport via Electric Field-Induced Reactions in Single Oligophenyl Junctions", submitted (2020).
82. S. Patel, C. D. Young, C. E. Sing, C. M. Schroeder, "Non-monotonic Dependence of Comb Polymer Relaxation on Branch Density in Semi-dilute Solutions", in revision (2020).
81. M. Tu, M. Lee, R. M. Robertson-Anderson, C. M. Schroeder, "Direct Observation of Ring Polymer Dynamics in the Flow-Gradient Plane of Shear Flow", *Macromolecules*, DOI: 10.1021/acs.macromol.0c01362 (2020).

80. D. Mai and C. M. Schroeder, "Single Molecule Studies of Synthetic Polymers", *ACS Macro Letters*, **9**, 1332-1341 (2020).
79. S. Li, H. Yu, X. Chen, A. A. Gewirth, J. S. Moore, C. M. Schroeder, "Covalent Ag-C Bonding Contacts from Unprotected Terminal Acetylenes for Molecular Junctions", *Nano Letters*, **20**, 5490-5495 (2020).
78. D. Kumar, C. M. Richter, C. M. Schroeder, "Double-mode Relaxation of Highly Deformed Vesicles", *Physical Review E*, **102**, 010605R (2020).
77. E. R. Jira, K. Shmilovich, T. S. Kale, A. Ferguson, J. D. Tovar, C. M. Schroeder, "Effect of Core Oligomer Length on the Phase Behavior and Assembly of pi-conjugated Peptides", *ACS Applied Materials & Interfaces*, **12**, 20722-20732 (2020).
76. K. R. Peddireddy, M. Lee, C. M. Schroeder, R. M. Robertson-Anderson, "Viscoelastic Properties of Ring-linear DNA Blends Exhibit Non-monotonic Dependence on Blend Composition", *Physical Review Research*, **2**, 023213 (2020).
75. S. Li, J. Li, H. Yu, S. Pudar, B. Li, J. Rodríguez-Lopez, J. S. Moore, C. M. Schroeder, "Characterizing Intermolecular Interactions in Redox-active Pyridinium-based Molecular Junctions", *Journal of Electroanalytical Chemistry*, in press (2020).
74. D. Kumar, A. Shenoy, J. C. Deutsch, C. M. Schroeder, "Automation and Flow Control for Particle Manipulation", *Current Opinion in Chemical Engineering*, **29**, 1-8 (2020).
73. H. Yu*, S. Li*, K. E. Schwieter, Y. Liu, B. Sun, J. S. Moore, C. M. Schroeder, "Charge Transport in Sequence-defined Conjugated Oligomers", *Journal of the American Chemical Society*, **142**, 4852-4861, (2020).
72. K. Peddireddy, M. Lee, Y. Zhou, S. Adalbert, C. M. Schroeder, R. Robertson-Anderson, "Unexpected Entanglement Dynamics in Semidilute Blends of Supercoiled and Ring DNA", *Soft Matter*, **16**, 152-161 (2020).
71. L. Cuculis*, C. Zhao*, Z. Abil, H. Zhao, D. Shukla*, C. M. Schroeder*, "Divalent Cations Enhance TALE DNA-Binding Specificity", *Nucleic Acids Research*, **48**, 1406-1422 (2020).
70. D. Kumar, C. M. Richter, C. M. Schroeder, "Conformational Dynamics and Phase Behavior of Lipid Vesicles in a Precisely Controlled Extensional Flow", *Soft Matter*, **16**, 337-347 (2020).
- News:** This article was also featured on the rear cover of the January issue of *Soft Matter*. This article was also highlighted on Phys.Org, National Science Foundation social media and website, and the main University of Illinois webpage.
69. D. Kumar, A. Shenoy, S. Li, C. M. Schroeder, "Orientation Control and Nonlinear Trajectory Tracking of Colloidal Particles using Microfluidics", *Physical Review Fluids*, **4**, 114203 (2019).
68. A. Shenoy, D. Kumar, S. Hilgenfeldt, C. M. Schroeder, "Flow Topology During Multiplexed Particle Manipulation using a Stokes Trap", *Physical Review Applied*, **12**, 054010 (2019).
67. S. Li*, H. Yu*, K. E. Schwieter, K. Chen, B. Li, Y. Liu, J. S. Moore, C. M. Schroeder, "Charge Transport and Quantum Interference in Oxazole-Terminated Conjugated Oligomers", *Journal of the American Chemical Society*, **141**, 16079-16084 (2019).
66. L. Valverde, B. Li, C. M. Schroeder, W. Wilson, "In Situ Photophysical Characterization of π -conjugated Oligopeptides Assembled via Continuous Flow Processing", *Langmuir*, **35**, 10947-10957 (2019).
65. C. Boucher-Jacobs, B. Li, C. M. Schroeder, and D. Guironnet, "Solubility and Activity of a Phosphinosulfonate Palladium Catalyst in Water with Different Surfactants", *Polymer Chemistry*, **10**, 1988-1992 (2019).

64. Y. Zhou, K. W. Hsiao, K. E. Regan, D. Kong, G. B. McKenna, R. M. Robertson-Anderson, C. M. Schroeder, “Dynamics of Single Ring Polymers in Semi-dilute Linear Polymer Solutions”, *Nature Communications*, **10**, 1753, DOI: 10.1038/s41467-019-09627 (2019).
63. B. Li, H. Yu, E. C. Montoto, Y. Liu, S. Li, K. Schwieter, J. Rodriguez-Lopez, J. S. Moore, C. M. Schroeder, “Intrachain Charge Transport through Conjugated Donor-Acceptor Oligomers”, *ACS Applied Electronic Materials*, **1**, 7-12 (2019).
62. Y. Zhou and C. M. Schroeder, “Dynamically Heterogeneous Relaxation of Entangled Polymer Chains”, *Physical Review Letters*, **120**, 267801 (2018).
- News:** This work was covered in the press by several news articles (EurekAlert and Phys.org), and it was also featured on the main NSF Homepage.
61. S. Li and C. M. Schroeder, “Synthesis and Single Molecule Studies of Thermo-responsive DNA Copolymers”, *ACS Macro Letters*, **7**, 281-286 (2018).
60. D. J. Mai, A. Sadaat, B. Khomami, C. M. Schroeder, “Stretching Dynamics of Single Comb Polymers in Extensional Flow”, *Macromolecules*, **51**, 1507-1517 (2018).
59. C. M. Schroeder, “Single Polymer Dynamics for Molecular Rheology”, *Journal of Rheology*, **62**, 371-403 (2018).
- News:** This article was awarded the 2019 Publication Award from the Society of Rheology. The article was the inaugural review article for the *Journal of Rheology* and appeared on the cover for the Jan-Feb 2018 issue.
58. S. Kumar, J. S. Katz, C. M. Schroeder, “Heterogeneous Drying and Non-monotonic Contact Angle Dynamics in Concentrated, Film-forming Latex Drops”, *Physical Review Fluids*, **2**, 114304 (2017).
57. B. Li, L. R. Valverde, F. Zhang, Y. Zhou, S. Li, Y. Diao, W. L. Wilson, C. M. Schroeder, “Macroscopic Alignment and Assembly of π -conjugated Oligopeptides using Colloidal Microchannels”, *ACS Applied Materials & Interfaces*, **9**, 41586-41593 (2017).
56. J. P. Berezney, A. B. Marciel, C. M. Schroeder, O. A. Saleh, “Scale-dependent Stiffness and Internal Tension of a Model Brush Polymer”, *Physical Review Letters*, **116**, 127801 (2017).
55. K. W. Hsiao, J. Dinic, Y. Ren, V. Sharma, C. M. Schroeder, “Passive Non-linear Microrheology for Determining Extensional Viscosity”, *Physics of Fluids*, **29** 121603 (2017).
54. Y. Zhou, B. Li, S. Li, H. A. M. Ardoena, W. L. Wilson, J. D. Tovar, C. M. Schroeder, “Concentration-Driven Assembly and Sol-Gel Transition π -Conjugated Oligopeptides”, *ACS Central Science*, **3**, 986-994 (2017).
53. L. W. Cuculis and C. M. Schroeder, “Molecular Mechanisms for Genome Editing Proteins: Single Molecule Studies of TALEs and CRISPR/Cas9”, *Annual Review of Chemical and Biomolecular Engineering*, **8**, 577-597 (2017).
52. B. Li, S. Li, Y. Zhou, H. A. M. Ardon, L. R. Valverde, W. L. Wilson, J. D. Tovar, C. M. Schroeder, “Non-equilibrium Self-assembly of π -conjugated Oligopeptides in Solution”, *ACS Applied Materials & Interfaces*, **9**, 3977-3984 (2017).
51. K. Hsiao, C. Sasmal, J. R. Prakash, C. M. Schroeder, “Direct Observation of DNA Dynamics in Semi-dilute Solutions in Extensional Flow”, *Journal of Rheology*, **61**, 151-167 (2017).
- News:** This article will appear on the cover of the Jan-Feb 2017 issue of *Journal of Rheology*.
50. C. Sasmal, K. Hsiao, C. M. Schroeder, J. R. Prakash, “Parameter-free Prediction of DNA Dynamics in Planar Extensional Flow of Semi-dilute Solutions”, *Journal of Rheology*, **61**, 169-186 (2017).
49. Y. Zhou and C. M. Schroeder, “Transient and Average Unsteady Dynamics of Single Polymers in Large-amplitude Oscillatory Extension”, *Macromolecules*, **49**, 8018-8030 (2016).

48. D. J. Mai and C. M. Schroeder, "Single Polymer Dynamics of Topologically Complex DNA", *Current Opinion in Colloid and Interface Science*, **26**, 28-40 (2016).
47. Y. Zhou and C. M. Schroeder, "Single Polymer Dynamics Under Large Amplitude Oscillatory Extension", *Physical Review Fluids*, **1**, 053301 (2016).
46. L. W. Cuculis, Z. Abil, H. Zhao, C. M. Schroeder, "TALE Proteins Search DNA using a Rotationally Decoupled Mechanism", *Nature Chemical Biology*, **12**, 831-837 (2016).
- See Also:** Front cover commentary & News and Views, *Nature Chemical Biology*, October 2016.
45. C. M. Schroeder, S. Köster, Y. Huang, "Emerging Investigators 2016: Discovery Science Meets Technology", *Lab on a Chip*, **16**, 2974-2976 (2016).
44. A. Shenoy, C. V. Rao, C. M. Schroeder, "Stokes Trap for Multiplexed Particle Manipulation and Assembly Using Fluidics", *Proceedings of the National Academy of Sciences*, **113**, 3976-3981 (2016).
- News:** This article was highlighted in the May 2016 issue of *Nature Physics* and other outlets.
43. K. Hsiao, C. M. Schroeder, C. E. Sing, "Ring Polymer Dynamics Are Governed by a Coupling between Architecture and Hydrodynamic Interactions", *Macromolecules*, **49**, 1961-1971 (2016).
42. D. T. Reilly, S. H. Kim, J. A. Katzenellenbogen, C. M. Schroeder, "Fluorescent Nanoconjugate Derivatives with Enhanced Photostability for Single Molecule Imaging", *Analytical Chemistry*, **87**, 11048-11057 (2015).
41. Y. Li, K. Hsiao, C.A. Brockman, D.Y. Yates, R.M. Robertson-Anderson, J.A. Kornfield, M.J. San Francisco, C. M. Schroeder, G. B. McKenna, "When Ends Meet: Circular DNA Stretches Differently in Elongational Flows", *Macromolecules*, **48**, 5997-6001 (2015).
40. X. Li, C. M. Schroeder, K. D. Dorfman, "Modeling the Stretching of Wormlike Chains in the Presence of Excluded Volume", *Soft Matter*, **11**, 5947-5954 (2015).
39. L. W. Cuculis, Z. Abil, H. Zhao, C. M. Schroeder, "Direct Observation of TALE Protein Dynamics Reveals a Two-state Search Mechanism", *Nature Communications*, **6**, 7277, DOI: 10.1038/ncomms8277 (2015).
38. R. Mohan, C. Sanpitakseree, A. V. Desai, S. E. Sevgen, C. M. Schroeder, P. J. A. Kenis, "A Microfluidic Approach to Study the Effect of Bacterial Interactions on Antimicrobial Susceptibility in Polymicrobial Cultures", *RSC Advances*, **5**, 35211-35223 (2015).
37. D. Mai, A. B. Marciel, C. E. Sing, C. M. Schroeder, "Topology-Controlled Relaxation Dynamics of Single Branched Polymers", *ACS Macro Letters*, **4**, 446-452 (2015).
- News:** This article appeared on the cover of the April 2015 issue of *ACS Macro Letters*.
36. A. B. Marciel, D. J. Mai, C. M. Schroeder, "Template-directed Synthesis of Structurally Defined Branched Polymers", *Macromolecules*, **48**, 1296-1303 (2015).
35. A. Mukherjee and C. M. Schroeder, "Flavin-based Fluorescent Proteins: Emerging Paradigms in Biological Imaging", *Current Opinion in Biotechnology*, **31**, 16-23 (2015).
34. A. Shenoy, M. Tanyeri, C. M. Schroeder, "Characterizing the Performance of the Hydrodynamic Trap Using a Control-based Approach", *Microfluidics and Nanofluidics*, **18**, 1055-1066, (2015).
33. A. Mukherjee, K. B. Weyant, J. Walker, U. Agrawal, I. Cann, C. M. Schroeder, "Engineering and Characterization of New LOV-based Fluorescent Proteins from *Chlamydomonas reinhardtii* and *Vaucheria frigida*", *ACS Synthetic Biology*, **4**, 371-377 (2015).
32. F. Latinwo, K. Hsiao, and C. M. Schroeder, "Nonequilibrium Thermodynamics of Dilute Polymer Solutions in Flow", *Journal of Chemical Physics*, **141**, 174903 (2014).

31. E. M. Johnson-Chavarria, U. Agrawal, M. Tanyeri, T. E. Kuhlman, C. M. Schroeder, “Automated Single Cell Microbioreactor for Monitoring Intracellular Dynamics and Cell Growth in Free Solution”, *Lab on a Chip*, **14**, 2688-2697 (2014).

News: This article appeared in an issue on “Emerging Investigators 2014” in *Lab on a Chip*.

30. K. S. Lee, A. B. Marciel, A. G. Kozlov, C. M. Schroeder, T. M. Lohman, T. Ha, “Ultrafast Redistribution of *E. coli* SSB Along Long Single-Stranded DNA via Intersegment Transfer”, *Journal of Molecular Biology*, **426**, 2413-2421(2014).
29. F. Latinwo and C. M. Schroeder, “Determining Elasticity from Single Polymer Dynamics”, *Soft Matter*, **10**, 2178-2187 (2014).
28. A. B. Marciel, M. Tanyeri, B. D. Wall, J. D. Tovar, C. M. Schroeder*, W. L. Wilson*, “Fluidic-directed Assembly of Aligned Oligopeptides with π -conjugated Cores”, *Advanced Materials*, **25**, 6398-6404 (2013).
27. F. Latinwo and C. M. Schroeder, “Nonequilibrium Work Relations for Polymer Dynamics in Dilute Solutions”, *Macromolecules*, **46**, 8345-8355 (2013).
26. M. Tanyeri and C. M. Schroeder, “Manipulation and Confinement of Single Particles using Fluid Flow”, *Nano Letters*, **13**, 2357-2364 (2013).
25. R. Mohan, A. Mukherjee, S. E. Sevgen, C. Sanpitakseree, J. Lee, C. M. Schroeder, P. J. A. Kenis, “A Multiplexed Microfluidic Platform for Rapid Antibiotic Susceptibility Testing”, *Biosensors and Bioelectronics*, **49**, 118-125 (2013).
24. A. Mukherjee, J. Walker, K. B. Weyant, C. M. Schroeder, “Characterization of Flavin-based Fluorescent Proteins: An Emerging Class of Powerful Fluorescent Reporters”, *PLOS ONE*, **8**, e64753 (2013).
23. A. B. Marciel and C. M. Schroeder, “New Directions in Single Polymer Dynamics”, *Journal of Polymer Science: Polymer Physics*, **51**, 556-566 (2013).
22. U. Agrawal, D. T. Reilly, C. M. Schroeder, “Zooming in on Biological Processes with Fluorescence Nanoscopy”, *Current Opinion in Biotechnology*, **24**, 646-653 (2013).

News: Appeared as Cover Art for this issue of *Current Opinion in Biotechnology*, **24** (2013).

21. Y. Kim, S. Kim, M. Tanyeri, J. A. Katzenellenbogen, C. M. Schroeder, “Dendrimer Probes for Enhanced Photostability and Localization in Fluorescence Imaging”, *Biophysical Journal*, **104**, 1566-1575 (2013).

News: This article was highlighted in a “New and Notable” article: *Biophysical Journal*, **104**, 1394 (2013).

20. A. Mukherjee, K. B. Weyant, J. Walker, C. M. Schroeder, “Directed Evolution of Bright Mutants of a Flavin-Dependent Anaerobic Fluorescent Protein from *Pseudomonas putida*”, *Journal of Biological Engineering*, **6**, 20, (2012).
19. Y. Kim, S. Kim, J. A. Katzenellenbogen, C. M. Schroeder, “Specific Labeling of Zinc Finger Proteins using Noncanonical Amino Acids and Copper-free Click Chemistry”, *Bioconjugate Chemistry*, **23**, 1891-1901 (2012).
18. D. J. Mai, C. A. Brockman, C. M. Schroeder, “Microfluidic Systems for Single DNA Dynamics”, *Soft Matter*, **8**, 10560-10572 (2012).
17. M.-H. Lai, J. H. Jeong, R. Devolder, C. Brockman, C. M. Schroeder, H. Kong, “Ellipsoidal Polyaspartamide Polymersomes with Enhanced Cell-Targeting Ability”, *Advanced Functional Materials*, **22**, 3239-3246 (2012).

16. M. Tanyeri, M. Ranka, N. Sittipolkul, C. M. Schroeder, “Microfluidic Wheatstone Bridge for Rapid Sample Analysis”, *Lab on a Chip*, **11**, 4181-4186 (2011).
15. F. Latinwo and C. M. Schroeder, “Model Systems for Single Molecule Polymer Dynamics”, *Soft Matter*, **7**, 7907-7913 (2011).

News: This article was selected as a “Hot Article” by the editor of *Soft Matter*.

14. C. A. Brockman, S. Kim, C. M. Schroeder, “Direct Observation of Single Flexible Polymers using Single Stranded DNA”, *Soft Matter*, **7**, 8005-8012 (2011).

News: This article was selected as a “Hot Article” by the editor of *Soft Matter*.

13. M. Tanyeri, M. Ranka, N. Sittipolkul, C. M. Schroeder, “A Microfluidic-based Hydrodynamic Trap: Design and Implementation”, *Lab on a Chip*, **11**, 1786-1794 (2011).
12. B. Schudel, M. Tanyeri, A. Mukherjee, C. M. Schroeder*, P. J. A. Kenis*, “Multiplexed Detection of Nucleic Acids in a Combinatorial Screening Chip”, *Lab on a Chip*, **11**, 1916-1923 (2011).
11. E. M. Johnson-Chavarria, M. Tanyeri, C. M. Schroeder, “Hydrodynamic Trap for Single Particles”, *Journal of Visualized Experiments*, **47** (2011).
10. Y. Han, D. Dodd, C. M. Schroeder, R. I. Mackie, I. K. O. Cann, “Comparative Analysis of Two Thermophilic Enzymes Exhibiting both β -1,4-Mannosidic and β -1,4-Glucosidic Cleavage Activities from *Caldanaerobius polysaccharolyticus*”, *Journal of Bacteriology*, **192**, 4111-4121 (2010).
9. M. Tanyeri, E. M. Johnson-Chavarria and C. M. Schroeder, “Hydrodynamic Trap for Single Particles and Cells”, *Applied Physics Letters*, **96**, 224101 (2010).

News: This article was highlighted in several outlets including the *Virtual Journal of Nanoscale Science & Technology*.

8. S. Kim, C. M. Schroeder, X. S. Xie, “Single Molecule Observation of HIV-1 Reverse Transcriptase Polymerization Dynamics on Flow-stretched DNA Templates”, *Journal of Molecular Biology*, **395**, 995-1006 (2010).
7. C. J. Yeoman, Y. Han, D. Dodd, C. M. Schroeder, R. I. Mackie, I. K. O. Cann, “Thermostable Enzymes as Biocatalysts in the Biofuel Industry”, *Advances in Applied Microbiology*, **70**, 1-55 (2010).
6. S. Kim, P. C. Blainey, C. M. Schroeder, X. S. Xie, “Multiplexed Single-molecule Assay for Enzymatic Activity on Flow-stretched DNA”, *Nature Methods*, **4**, 397-399 (2007).
5. C. M. Schroeder, R. E. Teixeira, E. S. G. Shaqfeh, S. Chu, “Characteristic Periodic Motion of Polymers in Shear Flow”, *Physical Review Letters*, **95**, 018301 (2005).
4. C. M. Schroeder, R. E. Teixeira, E. S. G. Shaqfeh, S. Chu, “The Dynamics of DNA in the Flow-Gradient Plane of Steady Shear Flow: Observations and Simulations”, *Macromolecules*, **38**, 1967-1978 (2005).
3. C. M. Schroeder, E. S. G. Shaqfeh, S. Chu, “Effect of Hydrodynamic Interactions on DNA Dynamics in Extensional Flow: Simulation and Single Molecule Experiment”, *Macromolecules*, **37**, 9242-9256 (2004).
2. C. M. Schroeder, H. P. Babcock, E. S. G. Shaqfeh, S. Chu, “Observation of Polymer Conformation Hysteresis in Extensional Flow”, *Science*, **301**, 1515-1519 (2003).
1. S. J. Vinay, D. M. Phillips, Y. S. Lee, C. M. Schroeder, X. Ma, M. C. Kim, M. S. Jhon, “Simulation of Ultrathin Lubricant Films Spreading on Various Carbon Surfaces”, *Journal of Applied Physics*, **87**, 6164-6166 (2000).

1. A. Mukherjee and C. M. Schroeder, "Microfluidic Methods in Single Cell Biology", in *Microfluidic Methods in Molecular Biology*, C. Lu and S. Verbridge (eds.), Springer, 2016.
2. C. M. Schroeder, P. C. Blainey, S. Kim, X. S. Xie, "Hydrodynamic Flow-stretching Assay for Single Molecule Studies of Nucleic Acid-Protein Interactions", in *Single Molecule Techniques: A Laboratory Manual*, T. Ha and P. Selvin (eds.), Cold Spring Harbor Laboratory Press, 2007.

PATENTS

1. C. M. Schroeder, H. P. Babcock, E. S. G. Shaqfeh, S. Chu, "System and Method for Confining an Object to a Region of Fluid Flow Having a Stagnation Point", United States Patent, No. 7,013,739 B2, March 21, 2006.
2. Y. Kim, S. Kim, M. Tanyeri, J. A. Katzenellenbogen, C. M. Schroeder, "Dye-conjugated Dendrimers", United States Patent, No. 9,448,173, University of Illinois at Urbana-Champaign, September 2016.
3. O. Milenkovic, N. Athreya, A. Khandelwal, J.-P. LeBurton, X. Li, C. M. Schroeder, K. Tabatabaei, B. Li, "On-Chip Nanoscale Storage System Using Chimeric DNA", United States Non-Provisional Patent, 19-1227-US, 16/593,450, October 2019.

INVITED LECTURES

77. C. M. Schroeder, "Single Polymer Dynamics for Molecular Rheology: Rings, Branches, and Entanglements", Plenary Lecture, International Congress on Rheology (ICR), Rio de Janeiro, Brazil, December 2020.
76. C. M. Schroeder, "Watching the Molecular Dance of Rings and Branched Polymers using Single Molecule Imaging", Platinum Seminar, Monash University, Melbourne, Australia (virtual), November 2020.
75. C. M. Schroeder, "Single Polymer Dynamics and Molecular Rheology of Ring Polymers", Department of Polymer Engineering, University of Akron, Akron, OH, March 2020. **Canceled due to COVID**
74. C. M. Schroeder, "Single Polymer Dynamics and Molecular Rheology of Ring Polymers", Department of Chemical Engineering, University of Oklahoma, Norman, OK, March 2020. **Canceled due to COVID**
73. C. M. Schroeder, "Self-assembly and Single Molecule Charge Transport in Conjugated Organic Materials", Department of Chemical and Biomolecular Engineering, University of California-Los Angeles, Los Angeles, CA, September 2019.
72. C. M. Schroeder, "Self-assembly and Single Molecule Charge Transport in Conjugated Organic Materials", Department of Chemical Engineering, University of Illinois at Chicago, Chicago, IL, September 2019.
71. C. M. Schroeder, "Self-assembly and Single Molecule Charge Transport in Conjugated Organic Materials", Department of Chemical and Biomedical Engineering, Florida State University, Tallahassee, FL, September 2019.
70. C. M. Schroeder, "Non-equilibrium Dynamics of Vesicles in Flow using a Stokes Trap", Future Faculty Workshop, Princeton University, Princeton, NJ, August 2019.
69. C. M. Schroeder, "Dynamic Heterogeneity in Ring-Linear Polymers Revealed by Single Molecule Techniques", SoftComp Workshop, Capri Workshop on Polymers in Fast Flows, Capri, Italy, July 2019.
68. C. M. Schroeder, "Recent Advances in Ring Polymer Dynamics: Development of New Chemistries for Pure Ring Systems", Telluride Science Research Conference, Polymer Physics, Telluride, CO, July 2019.

67. C. M. Schroeder, "Self-assembly and Single Molecule Electronics of pi-conjugated Peptides", Department of Chemical and Biomolecular Engineering, University of Delaware, Newark, DE, May 2019.
66. C. M. Schroeder, "Non-equilibrium Dynamics of Vesicles in Precisely Controlled Flows using a Stokes Trap", Institute of Non-Newtonian Fluid Mechanics, Lake Vyrnwy, Wales, April 2019.
65. C. M. Schroeder, "Optically and Electronically Active Self-assembled pi-conjugated Peptides", American Physical Society, APS March Meeting, DPOLY, Boston, MA, March 2019.
64. C. M. Schroeder, "Dynamic Heterogeneity in Single Polymer Dynamics and TALE Protein Search on DNA", Department of Physics, McGill University, Montreal, Canada, November 2018.
63. C. M. Schroeder, "Design and Engineering of Materials for Bioorganic Electronics: Supramolecular Assembly and Single Molecule Charge Transport", School of Chemical Engineering, Purdue University, West Lafayette, IN, November 2018.
62. C. M. Schroeder (speaker), X. Li, J.-P. Leburton, O. Milenkovic, "An On-Chip Nanoscale Storage System Using Chimeric DNA", SemiSynBio Meeting, NSF/SRC, Alexandria, VA, November 2018.
61. C. M. Schroeder, "Design and Engineering of Biohybrid Materials for Organic Electronics: From Supramolecular Assembly to Single Molecule Charge Transport", AIChE Area 22BA Plenary Talk, Bionanotechnology, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, October, 2018.
60. C. M. Schroeder (with R. Priestly, J. Kalow, M. El-Jeffries), "The Interview and Negotiation Process", Future Faculty Workshop: Developing Diverse Leaders for Tomorrow, University of Delaware, July 2018.
59. C. M. Schroeder, "Direct Observation of TALE Protein Dynamics on DNA: Non-specific Search and Specific Binding", Department of Molecular Biology, Microbiology, and Biochemistry, Southern Illinois University-Carbondale, March 2018.
58. C. M. Schroeder, "Single Polymer Dynamics of Architecturally Complex Materials: Combs, Rings, Entanglements, Oh My!", Gordon Research Conference on Colloids, Macromolecular, and Polyelectrolyte Solutions, Ventura, CA, February 2018.
57. C. M. Schroeder, "Direct Observation of TALE(N) Protein Dynamics on DNA", International Workshop on Protein-DNA Interactions: From Biophysics to Cancer Biology, Rice University, December 2017.
56. C. M. Schroeder, "Single Polymer Dynamics of Architecturally Complex Materials: Combs, Entanglements, and Self-Assembly", Department of Chemical Engineering, University of Texas at Austin, October, 2017.
55. C. M. Schroeder, "Single Polymer Dynamics in Semi-dilute Unentangled Solutions: From Molecular Conformation to Normal Stress", Department of Chemical Engineering, University of California-Santa Barbara, May 2017.
54. C. M. Schroeder, "Stokes Trap: Applications to Colloids, Vesicles, and Single Polymer Dynamics", Center for Interdisciplinary Research on Fluids, University of California-Santa Barbara, May 2017.
53. C. M. Schroeder, "Single Polymer Dynamics of Comb, Ring, and Entangled Polymers", Plenary Talk, Institute of Non-Newtonian Fluid Mechanics, Lake Vyrnwy, Wales, April 2017.
52. C. M. Schroeder, "Single Polymer Dynamics and Applications of the Stokes Trap", Department of Mechanical Engineering (Fluids Group), University of Liverpool, April 2017.
51. C. M. Schroeder, "Directed Assembly and Microrheology of Synthetic π -conjugated Oligopeptides", Keynote Talk, Annual European Rheology Conference, Copenhagen, Denmark, April 2017.
50. C. M. Schroeder, "Single Polymer Dynamics of Comb, Ring, and Entangled Polymers", March Meeting 2017, American Physical Society, New Orleans, LA, March 2017.

49. C. M. Schroeder, "A Molecular View of Soft Matter Dynamics", Packard Fellows Annual Meeting, Monterey, CA, September 2016.
48. C. M. Schroeder, "Single Polymer Dynamics in Large Amplitude Oscillatory Extension", 2016 International Congress on Rheology, Kyoto, Japan, August 2016.
47. C. M. Schroeder, "Single Molecule Studies of Topologically Complex Polymers", Department of Chemical & Biochemical Engineering, Missouri University of Science & Technology, March 2016.
46. C. M. Schroeder, "Single Molecule Studies of Topologically Complex Polymers", Department of Physics, University of Ottawa, Ontario, Canada, February 2016.
45. C. M. Schroeder, "Stokes Trap: Multiplexed Particle Manipulation and Assembly using Fluidics", Department of Mechanical Engineering, TU Eindhoven, Eindhoven, Netherlands, January 2016.
44. C. M. Schroeder, "Single Molecule Studies of Topologically Complex Polymers", Materials Science & Technology, University of Crete, Crete, Greece, January 2016.
43. C. M. Schroeder, "Single Molecule Studies of Topologically Complex Polymers", School of Engineering, Brown University, Providence, RI, November 2015.
42. C. M. Schroeder, "Stokes Trap: Multiplexed Trapping of Particles and Molecules", Physics and Chemistry of Microfluidics, Gordon Research Conference, Mt. Snow, VT, June 2015.
41. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics: Branched Polymers, Complex Topologies, and Semi-dilute Solutions", APS March Meeting, San Antonio, TX, March 5, 2015.
40. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Fluidic-directed Assembly", Department of Chemical Engineering, CU Boulder, Boulder, CO, September 30, 2014.
39. C. M. Schroeder, "Non-equilibrium Work Relations for Polymer Dynamics", Keynote Lecture, 6th Pacific Rim Conference on Rheology, Melbourne, Australia, July 22, 2014.
38. C. M. Schroeder, "Non-equilibrium Work Relations for Polymer Physics: A Tutorial for Practical Use in Polymer Dynamics", Gordon Research Conference on Polymer Physics, South Hadley, MA, July 16, 2014.
37. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Fluidic-directed Assembly of Soft Materials", Department of Chemical Engineering, Stanford University, April 10, 2014.
36. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Microfluidic Assembly of Soft Materials", Department of Chemical Engineering, Rice University, Houston, TX, March 20, 2014.
35. C. M. Schroeder, "Advanced in Fluorescent Probes and Microfluidic Systems for Molecular Biophysics", Department of Biochemistry, University of Missouri, Columbia, MO, February 21, 2014.
34. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Microfluidic Assembly of Soft Materials", Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, November 21, 2013.
33. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Microfluidic Assembly of Soft Materials", Department of Chemical Engineering, University of Florida, Gainesville, FL, October 28, 2013.
32. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Microfluidic Assembly of Soft Materials", Department of Chemical & Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA, October 9, 2013.
31. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Microfluidic Assembly of Soft Materials", Soft Materials Seminar, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, September 3, 2013.

30. C. M. Schroeder, "Advances in Molecular Probes and Microfluidic Systems for Molecular Biophysics", Center for Physics of Living Cells, Biophysics, University of Illinois at Urbana-Champaign, Urbana, IL, August 30, 2013.
29. C. M. Schroeder, "Advanced Molecular Probes for Super-resolution Imaging", Abbott Laboratories, Abbott Park, IL, June 14, 2013.
28. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Molecular Probe Engineering for Super-resolution Imaging", Department of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, February 25, 2013.
27. C. M. Schroeder, "New Directions in Single Polymer Dynamics: Hybrid Biomaterials, Microfluidic Trapping, and Molecular Rheology", Department of Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA, February 21, 2013.
26. C. M. Schroeder, "New Directions in Single Polymer Dynamics: Molecular Rheology, Hybrid Biomaterials, and Microfluidic Trapping", Metzner Award Lecture, Society of Rheology, 84th Annual Meeting, Pasadena, CA, February 14, 2013.
25. C. M. Schroeder, "New Directions in Single Polymer Dynamics: Hybrid Biomaterials, Microfluidic Trapping, and Molecular Rheology", Fluids Seminar Series, Department of Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, November 9, 2012.
24. C. M. Schroeder, "Single Cell Analysis via Microfluidic Trapping and Advances in Biological Imaging", Department of Agricultural & Biological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, October 12, 2012.
23. C. M. Schroeder, "New Directions in Single Polymer Dynamics: Hybrid Biomaterials, Microfluidic Trapping, and Molecular Rheology", Department of Biomedical Engineering, Northwestern University, Evanston, IL, October 9, 2012.
22. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Molecular Probe Engineering for Super-resolution Imaging", Department of Chemical Engineering, Caltech, Pasadena, CA, October 4, 2012.
21. C. M. Schroeder, "New Frontiers in Single Polymer Dynamics and Molecular Probe Engineering for Super-resolution Imaging", Department of Chemical Engineering, Stanford University, Stanford, CA, October 2, 2012.
20. C. M. Schroeder, "Molecular Engineering for Advanced Biological Imaging and Soft Materials Dynamics", Packard Fellows Meeting, David and Lucile Packard Foundation, Monterey, CA, September 6, 2012.
19. C. M. Schroeder, "A Molecular Engineering Approach to Biological Imaging: From Polymers to Fluorescent Proteins to New Fluorescent Probes", Department of Bioengineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, November 10, 2011.
18. C. M. Schroeder, "Single Cell & Single Molecule Studies in Engineering: From Polymer Dynamics to Biological Systems", Department of Chemical Engineering, Lehigh University, Bethlehem, Pennsylvania, March 16, 2011.
17. C. M. Schroeder, "Single Cell & Single Molecule Studies in Engineering: From Polymer Dynamics to Biological Systems", Department of Chemical & Biological Engineering, Northwestern University, Evanston, Illinois, January 13, 2011.
16. C. M. Schroeder, "Single Cell & Single Molecule Studies in Engineering: From Polymer Dynamics to Biological Systems", Department of Chemical Engineering, RPI, Troy, New York, November 17, 2010.
15. C. M. Schroeder, "Polymer Dynamics at the Single Molecule Level", Department of Mathematical Sciences and Department of Mechanical Engineering, New Jersey Institute of Technology, Newark, NJ, November 2, 2009.

14. C. M. Schroeder, "Single Molecule Studies of HIV-1 Reverse Transcriptase and Nucleic Acid Interactions", Department of Physics, Physics of Living Cells Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, September 12, 2008.
13. C. M. Schroeder, "Single Molecule Studies of HIV-1 Reverse Transcriptase and Nucleic Acid Interactions", Department of Biochemistry, University of Illinois at Urbana-Champaign, Urbana, IL, August 29, 2008.
12. C. M. Schroeder, "Single Molecule Studies of Protein Collisions & HIV-1 Reverse Transcriptase", Department of Chemical and Biological Engineering, University of Wisconsin-Madison, September 4, 2007.
11. C. M. Schroeder, "Single Molecule Studies in Polymer Physics and Biology", Courant Institute of Mathematical Sciences, New York University, New York, NY, April 12, 2007.
10. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemical and Biological Engineering, University of Wisconsin-Madison, March 7, 2006.
9. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemical Engineering, University of Delaware, February 21, 2006.
8. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemical Engineering, University of Texas at Austin, February 14, 2006.
7. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemical Engineering, Princeton University, February 8, 2006.
6. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemical Engineering, University of California-Santa Barbara, February 2, 2006.
5. C. M. Schroeder, "Single Molecule Studies of DNA Replication", Department of Chemical Engineering, Stanford University, January 31, 2006.
4. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemical and Biomolecular Engineering, University of Illinois, Urbana-Champaign, January 26, 2006.
3. C. M. Schroeder, "Single Molecule Studies of DNA Replication and Polymer Physics", Department of Chemistry, Massachusetts Institute of Technology, January 9, 2006.
2. C. M. Schroeder (speaker), S. Chu, E. S. G. Shaqfeh, "DNA Manipulation at the Single Molecule Level", Applied Biosystems, Foster City, CA, September 2003.
1. C. M. Schroeder (speaker), E. S. G. Shaqfeh, S. Chu, "Configuration Hysteresis in Polymer Extension", Department Seminar, Department of Chemical Engineering, Stanford University, Stanford, CA, May 2003.

SYMPOSIA OR CONFERENCE PROCEEDINGS

1. C. M. Schroeder, E. S. G. Shaqfeh, R. E. Teixeira, S. Chu, "Non-equilibrium Behavior of DNA Molecules in Flows of Dilute and Concentrated Solutions", Proceedings of the XIVth International Congress on Rheology, Edited by The Korean Society of Rheology, Seoul, Korea, August 2004.
2. B. R. Schudel, M. Tanyeri, C. M. Schroeder, P. J. A. Kenis, "Fluorescence Microscopy for Detection of Molecular Beacons in a Multiplexed Microfluidic Device", Miniaturized Systems for Chemistry and Life Sciences (MicroTAS), Jeju, Korea, November 2009.
3. C. M. Schroeder, C. A. Brockman, F. Latinwo, "New Directions in Single Polymer Dynamics: Designer Macromolecules and Jarzynski Analysis for Materials Properties", International Congress on Rheology, Lisbon, Portugal, August 2012.

4. C. M. Schroeder, D. J. Mai, Y. Zhou “Single Molecule Studies of Branched Polymers and Large Amplitude Oscillatory Extension (LAOE)”, International Congress on Rheology, Kyoto, Japan, August 2016.

PROFESSIONAL SERVICE (LEADERSHIP, OFF CAMPUS)

1. Technical Co-Chair, 2022 Annual Meeting of the Society of Rheology, Chicago, IL, October 2022
2. Co-Organizer, CECAM Meeting on Ring Polymers, Prato, Italy, June 2022
3. Area Chair, Area 1J (Fluid Dynamics), American Institute of Chemical Engineers, 2018-present
4. Organizer, Shaqfeh Symposium, Stanford University, August 2019
5. Area Co-Chair, Area 1J (Fluid Dynamics), American Institute of Chemical Engineers, 2016-2018
6. Member, Floor Planning Committee, Area 1J, American Institute of Chemical Engineers, 2012-present
7. Meeting Programming Chair (MPC), Area 1J, American Institute of Chemical Engineers, AIChE Annual Meeting 2014
8. Membership Committee, Society of Rheology, 2013-2020

PROFESSIONAL SERVICE (EDITORSHIP)

1. Member, Editorial Board, *Scientific Reports*, 2019-present.
2. Guest Editor, *Lab on a Chip*, 2016.

PRESENT PROFESSIONAL ACTIVITIES & LEADERSHIP (ON CAMPUS)

1. Co-Leader, Molecular Science and Engineering (MSE) Theme, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign
2. Leader, Molecular Design and Engineering (MDE) Group, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign
3. Member, Curriculum Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign
4. Member, Executive Committee, Beckman Institute, University of Illinois at Urbana-Champaign
5. Member, Biophysics Qualifying Exam Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign
6. Member, Awards Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign
7. Member, Advising Committee, Undergraduates, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign

PROFESSIONAL SERVICE (SESSION CHAIRS)

1. Session Chair, “Energy & Sustainability”, American Institute of Chemical Engineers Chicago Meeting, Chicago, IL, October 2009.
2. Session Co-Chair, “Complex and Bio-Fluid Dynamics I”, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
3. Session Chair, “Complex and Bio-Fluid Dynamics II”, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.

4. Discussion Leader, Gordon Research Conference on Colloids, Macromolecules and Polyelectrolytes, Ventura, CA, February 2010.
5. Session Judge, Student/Postdoc Poster Session, Society of Rheology Annual Meeting, Santa Fe, NM, October 2010.
6. Session Chair, “Non-Newtonian Flows and Nonlinear Hydrodynamics”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
7. Session Chair, “Bio-Fluid Dynamics”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
8. Session Chair, “Bio-Fluid Dynamics”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
9. Poster Session Judge, Student/Postdoc Poster Session, American Institute of Chemical Engineers (Area 1J), Pittsburgh, PA, October 2012.
10. Session Chair, “Rheology in Biological Systems”, Society of Rheology Annual Meeting, Pasadena, CA, February 2013.
11. Session co-Chair, “Bio-Fluid Dynamics”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2013.
12. Discussion Leader, Gordon Research Conference on Macromolecular Materials, Ventura, CA, January 2015.
13. Session Chair, “Micro and Nanofluidics”, Society of Rheology Annual Meeting, Baltimore, MD, October 2015.
14. Session Chair, “Rheology and Dynamics of Complex Fluids”, Workshop on New Aspects on Micro- and Macroscopic Flows in Soft Matter, Okinawa Institute of Science and Technology, Okinawa, Japan, August 2016.
15. Session Chair, “Biosensors, Bionanotechnology, and Bioelectronics”, International Conference on Biomolecular Engineering, San Diego, CA, January 2017.
16. Session Chair, “Microrheology and Microfluidics”, Society of Rheology Annual Meeting, Denver, CO, October 2017.

PROFESSIONAL SERVICE (REVIEWER)

1. Reviewer, Molecular Foundry, Lawrence Berkeley National Laboratory, 2012-2014
2. Reviewer, NASA, 2013
3. Reviewer, National Science Foundation, Spring 2009, Spring 2010, Fall 2010, Fall 2011, Spring 2012, Fall 2013, Spring 2015, Spring 2016, Spring 2018
4. Reviewer, Graduate Women in Science Fellowships, 2011
5. Reviewer, ACS Petroleum Research Fund, 2014, 2016, 2020
6. Reviewer, Wellcome Trust, 2016.
7. Reviewer, Deutsche Forschungsgemeinschaft, 2016
8. Reviewer, Natural Sciences and Engineering Research Council of Canada, 2016
9. Reviewer, Swiss National Science Foundation, 2017
10. Reviewer, Department of Energy, 2018

PAST PROFESSIONAL ACTIVITIES (ON CAMPUS)

1. Associate Head, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2020
2. Associate Vice Chair, College of Engineering Executive Committee, University of Illinois at Urbana-Champaign, 2019
3. Reporting Officer, College of Engineering, University of Illinois at Urbana-Champaign, 2019
4. Member, Executive Committee, College of Engineering, University of Illinois at Urbana-Champaign, 2018-2020
5. Member, Awards Committee, College of Engineering, University of Illinois at Urbana-Champaign, 2017-2019
6. Member, Faculty Advisory Committee, Roy J. Carver Biotechnology Center, University of Illinois at Urbana-Champaign, 2015-2019
7. Member, Executive Committee, Center for Biophysics and Quantitative Biology, University of Illinois at Urbana-Champaign, 2015-2018
8. Engineering Faculty Leadership Forum, College of Engineering, University of Illinois at Urbana-Champaign, 2017-2018
9. Director of Graduate Admissions, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2014-2016
10. Member, Graduate Affairs & Recruiting Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2016
11. Member, Department Head Review Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2015-2016
12. Chair, Biophysics Qualifying Exam Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign, 2014-2015
13. Chair, Faculty Recruiting Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Spring 2014
14. Member, Chancellor and Provost Committee on LGBTQ Concerns Committee, University of Illinois at Urbana-Champaign, 2014-2015, 2017-2018
15. Fellowship Coordinator, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2013
16. Member, Safety Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2013
17. Member, SURGE/MERGE Advisory Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2013
18. Member, Biophysics Qualifying Exam Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign, 2010-2012
19. Member, Biophysics Courses & Curriculum Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign, 2012-2013
20. Member, Department Head Search Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2010-2011
21. Member, Organizing Committee, Annual Workshop, Center for Nanoscale Science and Technology, University of Illinois at Urbana-Champaign, 2010

PROFESSIONAL ASSOCIATIONS

1. American Institute of Chemical Engineers, 1995-present
2. Society of Rheology, 2001-present
3. Protein Society, 2005
4. American Association for the Advancement of Science (AAAS)
5. American Physical Society (GSOFT, DPOLY)

PEER REVIEW

Science, Nature, Physical Review Letters, Proceedings of the National Academy of the Sciences, Nature Structural & Molecular Biology, Journal of the American Chemical Society, Journal of Rheology, Physical Review E, Macromolecules, Soft Matter, Biophysical Journal, Biomacromolecules, Lab on a Chip, Nano Letters, Journal of Non-Newtonian Fluid Mechanics, Nanoscale, ACS Nano, Langmuir, IEEE Control Systems, ACS Catalysis, Bioconjugate Chemistry, Journal of Virological Methods, Biomedical Microdevices, Microfluidics and Nanofluidics, Sensors & Actuators: B. Chemical, PLoS Computational Biology, ACS Macro Letters, Analytical Chemistry, Biosystems Engineering, Journal of Biomedical Optics, Small, Advanced Healthcare Materials, Protein Science, BMC Systems Biology, Particle and Particle Systems Characterization, Analyst, Journal of Heat and Mass Transfer, Journal of Chemical Physics, Analytical Methods, FEBS Letters, Journal of Physical Chemistry, Molecular Biosystems, ACS Synthetic Biology, Advanced Materials, Journal of Polymer Science Part B: Polymer Physics, Physics of Fluids, Advanced Functional Materials, Biomicrofluidics, Rheological Acta, Physics Letters A, Colloids & Surfaces A, Physical Review X, Journal of Molecular Biology

TEACHING

1. Instructor, *Macromolecular Solids*, Course 455, Department of Materials Science & Engineering, University of Illinois. Spring 2021.
2. Co-organizer, *Soft Materials Seminar*, Department of Materials Science & Engineering, University of Illinois. Fall 2020, Spring 2021.
3. Instructor, *Dynamics of Complex Liquids*, Course 594cms, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2018.
4. Instructor, *Fluid Dynamics*, Course 522, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2014, Spring 2015, Spring 2019, Spring 2020.
5. Instructor, *Applied Mathematics in Chemical Engineering*, Course 521, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2012, Fall 2012, Fall 2015, Fall 2017, Fall 2018, Fall 2020.
6. Instructor, *Polymer Science & Engineering*, Course 456/594, Department of Chemical & Biomolecular Engineering, University of Illinois. Fall 2008, Fall 2009, Fall 2010, Fall 2011, Spring 2013, Fall 2013.
7. Instructor, *Bioenergy & Biofuels Technology*, Course 494/594CMS, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2010, Spring 2011.
8. Teaching Assistant, *Fluid Mechanics*, Course 120A, Department of Chemical Engineering, Stanford University. Winter 2001.
9. Teaching Assistant, *Microscale Transport*, Course 310A, Department of Chemical Engineering, Stanford University. Winter 2002.

SHORT COURSES

1. C. M. Schroeder, with Anubhav Tripathi and Annie Colin, *Microfluidics and Applications*, Society of Rheology Annual Meeting, Pasadena, CA, February 2013.

CONTRIBUTED PRESENTATIONS

210. D. Kumar (speaker) and C. M. Schroeder, “Vesicle dynamics in large amplitude oscillatory extension, simulations and microfluidic experiments”, APS Division of Fluid Dynamics, Virtual Online Meeting, November 2020.
209. D. Kumar (speaker) and C. M. Schroeder, “Transient stretching and relaxation of highly deformed vesicles in strong flows using a Stokes trap”, American Institute of Chemical Engineers Annual Meeting, Virtual Online Meeting, November 2020.
208. M. W. Tu, C.-W. Lee, O. Davydovich, C. J. Rudolph, J. S. Moore, S. Rogers, C. M. Schroeder (poster), “Linear and nonlinear shear rheology of ‘pure’ ring polymers free from linear contaminants using a low-ceiling temperature chemistry”, American Institute of Chemical Engineers Annual Meeting, Virtual Online Meeting, November 2020.
207. C. D. Young (speaker), Y. Zhou, C. M. Schroeder, C. E. Sing, “Dynamics of semidilute solutions of ring/linear polymer blends in planar extensional flow”, American Institute of Chemical Engineers Annual Meeting, Virtual Online Meeting, November 2020.
206. C. Lin (speaker), D. Kumar, C. Richter, C. M. Schroeder, V. Narsimhan, “Vesicle Dynamics in Large Amplitude Oscillatory Extension, Simulations and Microfluidic Experiments”, American Institute of Chemical Engineers Annual Meeting, Virtual Online Meeting, November 2020.
205. M. Q. Tu (speaker), M. Lee, R. M. Robertson-Anderson, C. M. Schroeder, “Single molecule visualization of ring polymers in the flow-gradient plane of shear flow”, American Institute of Chemical Engineers Annual Meeting, Virtual Online Meeting, November 2020.
204. C. Pan, S. K. Tabatabaei, A. G. Hernandez, C. M. Schroeder, O. Milenkovic, “Image Processing in DNA”, 45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Barcelona, Spain, May 2020. **This meeting was converted to a fully virtual format due to the COVID-19 pandemic of 2019-2020.**
203. S. Li, H. Yu, J. S. Moore, C. M. Schroeder, “Manipulating Chemical Bonds on Metal Interfaces at the Single Molecule Level”, American Chemical Society (ACS) Spring Meeting, Philadelphia, PA, March 2020. **This meeting was canceled due to the COVID-19 pandemic of 2019-2020.**
202. J. Li, S. Li, Y. Tan, B. W. Boudouris, C. M. Schroeder (poster), “Single Molecule Charge Transport in Pyridinium and TEMPO-based Redox-active Molecules”, American Chemical Society (ACS) Spring Meeting, Philadelphia, PA, March 2020. **This meeting was canceled due to the COVID-19 pandemic of 2019-2020.**
201. S. Patel (speaker) and C. M. Schroeder, “Direct Visualization of Comb Polymer Dynamics Using Single Molecule Studies”, March APS Meeting (American Physical Society), Denver, CO, March 2020. **This meeting was canceled due to the COVID-19 pandemic of 2019-2020.**
200. M. Tu (speaker), R. Robertson-Anderson, C. M. Schroeder, “Single Molecule Visualization of Single Ring Polymers in the Flow-gradient Plane of Shear Flow”, March APS Meeting (American Physical Society), Denver, CO, March 2020. **This meeting was canceled due to the COVID-19 pandemic of 2019-2020.**
199. S. K. Tabatabaei, O. Milenkovic, C. M. Schroeder, “Click Chemistry Assisted, Chimeric DNA-based Data Storage”, Biophysical Society (BPS Annual Meeting), San Diego, CA, February 2020.
198. D. Kumar (speaker), C. Richter, and C. M. Schroeder, “Dynamics of Highly Deformed Non-spherical Vesicles in Steady and Time-dependent Flow”, APS Division of Fluid Dynamics Meeting (APS DFD), Seattle, WA, November 2019.
197. B. Li (speaker) and C. M. Schroeder, “Single Molecule Studies of Charge Transport in Redox Active Biomolecules”, American Institute of Chemical Engineers Annual Meeting, Orlando, FL, November 2019.

196. S. Patel (speaker) and C. M. Schroeder, “Direct Observation of Comb Polymer Dynamics in Semi-dilute Solutions Using Single Molecule Imaging”, American Institute of Chemical Engineers Annual Meeting, Orlando, FL, November 2019.
195. D. Kumar (speaker), C. Richter, and C. M. Schroeder, “Non-equilibrium Dynamics of Vesicles in Flow Using a Stokes Trap”, Annual Society of Rheology Meeting, Raleigh, NC, October 2019.
194. D. Kumar, A. Shenoy, C. Richter, and C. M. Schroeder (poster), “Dynamics of Anisotropic Brownian Particles by Simultaneous Control of Position and Orientation”, Annual Society of Rheology Meeting, Raleigh, NC, October 2019.
193. M. Tu (speaker), R. Robertson-Anderson, C. M. Schroeder, “Direct Visualization of Single Ring Polymers in the Flow-gradient Plane of Shear Flow”, Annual Society of Rheology Meeting, Raleigh, NC, October 2019.
192. M. Tu, C.-W. Lee, S. A. Rogers, C. M. Schroeder (poster), “Linear and Nonlinear Shear Rheology of Cyclic Poly(phthalaldehyde): A Chemistry with Unstable Linear Contaminants for Ring Polymer Physics Studies”, Annual Society of Rheology Meeting, Raleigh, NC, October 2019.
191. S. Patel (speaker) and C. M. Schroeder, “Direct Visualization of Single Comb Polymer Dynamics in Semi-dilute Solutions: Complex Interplay of Topology and Concentration at the Molecular Scale”, Annual Society of Rheology Meeting, Raleigh, NC, October 2019.
190. S. Patel and C. M. Schroeder (poster), “Single molecule dynamics of symmetric 3-arm star polymers in dilute solution”, Annual Society of Rheology Meeting, Raleigh, NC, October 2019.
189. S. Li, H. Yu, K. E. Schwieter, B. Li, J. S. Moore, C. M. Schroeder (poster), “Direct Measurement of Single Molecule Charge Transport: From Molecular Design to Programmable Control”, Mi-Bio (Materials Innovation for Bioelectronics from Intrinsically Stretchable Organics) Summit 2019, Purdue University, West Lafayette, IN, July 2019.
188. S. Patel (speaker) and C. M. Schroeder, “Direct Visualization of Comb Polymer Dynamics in Unentangled Semi-dilute Solutions Using Single Molecule Studies”, International Soft Matter Conference (ISMC), Edinburgh, UK, June 2019.
187. S. Li (speaker), H. Yu, K. E. Schwieter, B. Li, J. S. Moore, C. M. Schroeder, “Direct Measurement of Single Molecule Charge Transport: From Molecular Design to Programmable Control”, Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, April 2019.
186. Y. Zhou (speaker) and C. M. Schroeder, “Dynamic Heterogeneity in Entangled Linear and Ring Polymers: Single Molecule Studies Reveal Surprises due to Molecular Architecture”, American Physical Society, APS March Meeting, Boston, MA, March 2019. **This presentation was part of the Pad-den Award Symposium in DPOLY at APS.**
185. S. Patel (speaker) and C. M. Schroeder, “Single Molecule Studies of Comb Polymer Dynamics in Semi-dilute Solutions”, American Physical Society, APS March Meeting, Boston, MA, March 2019.
184. M. Tu, C.-W Lee, C. Rudolphi, S. Rogers, C. M. Schroeder (poster), “Polymer Physics and Flow Dynamics of Thermodynamically Pure Ring Polymers”, American Physical Society, APS March Meeting, Boston, MA, March 2019.
183. D. Kumar, A. Shenoy, and C. M. Schroeder (poster), “Precise Control over the Position and Orientation of Anisotropic Colloidal Particles using a Stokes Trap”, American Physical Society, APS March Meeting, Boston, MA, March 2019.
182. D. Kumar (speaker) and C. M. Schroeder, “Non-equilibrium Deformation and Relaxation of Giant Floppy Vesicles in a Precisely Controlled Extensional Flow”, American Physical Society, APS March Meeting, Boston, MA, March 2019.
181. S. Jain (speaker), S. Shukla, C. M. Schroeder, P. Selvin, H. Zhao, “Single Molecule Investigation of TALE Protein’s Genome-Wide Target Search in Live Cells”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2018.

180. S. Patel (speaker) and C. M. Schroeder, "Single Molecule Studies of Comb Polymer Dynamics in Semi-Dilute Solutions", American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2018.
179. Y. Zhou (speaker) and C. M. Schroeder, "Direct Observation of Linear and Circular Polymers in Non-Equilibrium Flows: Single Molecule Studies of Topology and Entanglements", American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2018.
178. D. Kumar (speaker) and C. M. Schroeder, "Nonequilibrium Deformation and Relaxation of Giant Floppy Vesicles in a Precisely Controlled Extensional Flow", American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2018.
177. D. Kumar (speaker), A. Shenoy, C. D. Young, S. Li, C. E. Sing, and C. M. Schroeder, "Simultaneous Orientation and Position Control of Anisotropic Brownian Particles using a Stokes Trap", American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2018.
176. D. Kumar, A. Shenoy, C. D. Young, S. Li, C. E. Sing, and C. M. Schroeder (poster), "Precise Control over the Position and Orientation of Anisotropic Colloidal Particles using a Stokes Trap", American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2018.
175. C. M. Schroeder (speaker) and Y. Zhou, "Entangled Polymer Chains Relax via Dynamically Heterogeneous Pathways", Society of Rheology Annual Meeting, Houston, TX, October 2018.
174. Y. Zhou (speaker), G. B. McKenna, R. M. Robertson-Anderson, and C. M. Schroeder, "Direct Observation of Ring Polymer Dynamics in Semi-dilute Solutions: Coupling of Molecular Topology and Interchain Interactions", Society of Rheology Annual Meeting, Houston, TX, October 2018.
173. D. Kumar and C. M. Schroeder (poster), "Nonequilibrium Deformation and Relaxation of Giant Floppy Vesicles in a Precisely Controlled Extensional Flow", Society of Rheology Annual Meeting, Houston, TX, October 2018.
172. S. Patel and C. M. Schroeder, "Single Molecule Studies of Comb Polymer Dynamics in Semidilute Solutions", Society of Rheology Annual Meeting, Houston, TX, October 2018.
171. D. Kong, S. Banik, M. J. San Francisco, R. M. Robertson-Anderson, C. M. Schroeder, and G. B. McKenna, "Rheology of Linear/Circular DNA Mixtures in the Linear Entanglement Regime", Society of Rheology Annual Meeting, Houston, TX, October 2018.
170. B. Li (speaker), H. Yu, S. Li, J. S. Moore, C. M. Schroeder, "Exploring the Intrachain Charge Transport Mechanism of Donor-acceptor Molecules using Scanning Tunneling Microscope-based break-junction (STM-BJ) Method", Midwest Single Molecule Workshop, Iowa State University, Ames, IA, July 2018.
169. S. Li and C. M. Schroeder (poster), "Synthesis and Single Molecule Studies of Thermo-responsive DNA Polymers", Midwest Single Molecule Workshop, Iowa State University, Ames, IA, July 2018.
168. D. Kumar and C. M. Schroeder (poster), "Non-equilibrium and Deformation and Relaxation of Giant Floppy Vesicles in a Precisely Controlled Extensional Flow", Midwest Single Molecule Workshop, Iowa State University, Ames, IA, July 2018.
167. C. M. Schroeder, "Watching Single Molecules in the Microscope", Girls Adventures in Mathematics, Engineering, and Science Camp, University of Illinois at Urbana-Champaign, Urbana, IL, June 2018.
166. C. M. Schroeder, "Single Molecule Studies of Soft Materials", Soft Materials Workshop (UIUC/U Chicago, Northwestern, DPI), University of Illinois at Urbana-Champaign, Urbana, IL June 2018.
165. B. Li (speaker), S. Li, C. M. Schroeder, "Tuning the Conductance of Oligopeptides in Single-Molecule Junctions", March Meeting 2018, American Physical Society, Los Angeles, CA, March 2018.
164. Y. Zhou and C. M. Schroeder, "Single Polymer Relaxation Dynamics in Entangled Solutions", March Meeting 2018, American Physical Society, Los Angeles, CA, March 2018.

163. S. Li, K. Schwieter, H. Yu, B. Li, J. S. Moore, and C. M. Schroeder, “Single Molecule Conductance of Sequence-Defined Oligomers”, March Meeting 2018, American Physical Society, Los Angeles, CA, March 2018.
162. C. M. Schroeder (speaker), K. Hsiao, J. Dinic, V. Sharma, “Passive non-linear microrheology for determining extensional viscosity”, Society of Rheology Annual Meeting, Denver, CO, October 2017.
161. Y. Zhou (speaker) and C. M. Schroeder, “Single Polymer Relaxation Dynamics in Entangled Solutions”, Society of Rheology Annual Meeting, Denver, CO, October 2017.
160. Y. Zhou and C. M. Schroeder (graphical poster), “Direct Observation of Single Polymer Dynamics in Large-amplitude Oscillatory Extension (LAOE)”, Society of Rheology Annual Meeting, Denver, CO, October 2017.
159. D. Kumar, A. Shenoy, C. M. Schroeder (poster), “Precise control over position and orientation of anisotropic colloidal particles using Stokes trap”, Society of Rheology Annual Meeting, Denver, CO, October 2017.
158. R. Robertson-Anderson (speaker) and C. M. Schroeder, “Single Chain Dynamics of Ring Polymers in Dilute and Semi-dilute Solutions”, Focused Workshop on Ring Polymers, Crete, Greece, September 2017.
157. S. Kumar, J. S. Katz, C. M. Schroeder (poster), “Visualizing Film-formation Dynamics: From Water-stable Latexes to Continuous Hydrophobic Films”, Gordon Research Conference on Soft Condensed Matter Physics, New London, NH, August 2017.
156. L. R. Valverde (speaker), W. L. Wilson, C. M. Schroeder, “Characterization of π -conjugated Oligopeptide Superstructures Created via Continuous Directed Self-assembly”, March Meeting 2017, American Physical Society, New Orleans, LA, March 2017.
155. A. Sadaat (speaker), D. J. Mai, C. M. Schroeder, B. Khomami, “Brownian Dynamics Simulations of Single Comb Polymers”, Society of Rheology Meeting, Tampa, Florida, February 2017.
154. C. M. Schroeder (speaker), L. W. Cuculis, Z. Abil, H. Zhao, “Direct Observation of TALE Protein Dynamics on DNA”, International Conference on Biomolecular Engineering, Society for Biological Engineering (AIChE), San Diego, CA, January 2017.
153. S. Li and C. M. Schroeder (poster), “Synthesis and Single Molecule Studies of DNA-PNIPAM Copolymers”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
152. S. Li (speaker) and C. M. Schroeder, “Single Molecule Studies of DNA-PNIPAM Copolymers”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
151. A. Sadaat, D. J. Mai, C. M. Schroeder, B. Khomami (poster), “Dynamics of Linear and Comb DNA Solutions Using Efficient Brownian Dynamics Simulation”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
150. Y. Zhou, C. M. Schroeder, S. A. Rogers (poster), “A Universal Interpretation of Transient Viscoelastic Extensional Dynamics: Application to Single Polymer Experiments”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
149. Y. Zhou (speaker) and C. M. Schroeder, “Single Polymer Dynamics in Large Amplitude Oscillatory Extension (LAOE)”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
148. K. Hsiao (speaker) and C. M. Schroeder “Single Polymer Dynamics of Linear and Circular Chains in Semi-Dilute Solutions”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016. **This talk was selected for the Excellence in Graduate Polymers Research Awards session in Area 8A.**

147. K. Hsiao, C. E. Sing, G. B. McKenna, C. M. Schroeder (poster), “Single Molecule Studies of Ring Polymer Dynamics in Dilute and Semi-Dilute Solutions”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
146. B. Li (speaker), S. Li, Y. Zhou, C. M. Schroeder, “Directed Self-Assembly of pi-Conjugated Oligopeptides for Supramolecular Electronics”, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
145. K. Hsiao (speaker) and C. M. Schroeder, “Microfluidic based Measurement of Normal Stress in Semi-dilute Polymer Solutions”, ChBE Graduate Student Symposium, University of Illinois at Urbana-Champaign, Urbana, IL, October 2016. **This talk was awarded 2nd place prize for the symposium.**
144. Y. Zhou and C. M. Schroeder (poster), “Single Polymer Dynamics in Large-amplitude Oscillatory Extension (LAOE)”, ChBE Graduate Student Symposium, University of Illinois at Urbana-Champaign, Urbana, IL, October 2016.
143. C. Sasmal, K. Hsiao, C. M. Schroeder, J. Ravi Prakash (speaker), “Stretch-relaxation of DNA Molecules in Semi-dilute Solutions”, 2016 International Congress on Rheology, Kyoto, Japan, August 2016.
142. D. J. Mai, A. B. Marciel, C. E. Sing, and C. M. Schroeder (poster), “Single Molecule Dynamics of Branched DNA Polymers”, Polymer Physics GRC, Mt. Holyoke, MA, July 2016.
141. A. Shenoy (speaker), C. V. Rao, and C. M. Schroeder, “Stokes Trap for Multiplexed Particle Manipulation and Assembly using Fluidics”, 90th ACS Colloid & Surface Science Symposium, Cambridge, MA, June 2016. **This presentation was awarded 3rd place prize in the Langmuir Student Oral Presentation Session.**
140. Y. Zhou (speaker) and C. M. Schroeder, “Single Polymer Dynamics under Large Amplitude Oscillatory Extensional (LAOE) Flow”, American Physical Society (APS) March Meeting, Baltimore, MD, March 2016.
139. K. Hsiao (speaker), Y. Li, G. B. McKenna, C. M. Schroeder, “Single Polymer Dynamics of Linear and Architecturally Complex Chains in Semi-dilute Solutions”, American Physical Society (APS) March Meeting, Baltimore, MD, March 2016.
138. B. Li (speaker), S. Li, Y. Zhou, J. D. Tover, W. Wilson, C. M. Schroeder, “Directed Self-assembly of pi-conjugated Oligopeptides for Supramolecular Electronics”, American Physical Society (APS) March Meeting, Baltimore, MD, March 2016.
137. A. Shenoy (speaker), C. V. Rao, C. M. Schroeder, “Stokes Trap: Multiplexed Particle Trapping and Manipulation using Fluidics”, American Physical Society (APS) March Meeting, Baltimore, MD, March 2016.
136. S. Kumar and C. M. Schroeder (poster), “Direct 3D Visualization of Internal Matrix Strain and Active Microstructure Dynamics under External Stress”, Dow UPI Program Meeting, Dow Chemical, Midland, MI, January 2016.
135. L. Cuculis (speaker), Z. Abil, H. Zhao, C. M. Schroeder, “Direct Observation of TALE Search Dynamics Reveals a Novel Helical Zip-line Mechanism”, Center for Physics of Living Cells Annual Symposium, University of Illinois at Urbana-Champaign, December 2015.
134. A. Shenoy (speaker), C. V. Rao, C. M. Schroeder, “Stokes Trap: Multiplexed Particle Trapping and Manipulation Using Fluidics”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
133. D. T. Reilly (speaker), S. Kim, J. A. Katzenellenbogen, C. M. Schroeder, “Fluorescent Dendrimer Nanoconjugates as Bright and Photostable Probes for Biological Imaging”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.

132. D. Mai (speaker) and C. M. Schroeder, “Topology-??Controlled Relaxation of Branched DNA Polymers”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
131. D. Mai (speaker) and C. M. Schroeder, “Synthesis, Characterization, and Single Molecule Dynamics of Branched DNA Polymers”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
130. K. Hsiao (speaker) and C. M. Schroeder, “Single Polymer Dynamics of Linear and Ring Polymers in Semi-dilute Solutions”, Society of Rheology Annual Meeting, Baltimore, MD, October 2015.
129. C. M. Schroeder (speaker) and D. Mai, “Single Molecule Studies of Comb Polymer Dynamics”, Society of Rheology Annual Meeting, Baltimore, MD, October 2015.
128. C. M. Schroeder (speaker) and A. Shenoy, “Stokes trap: Multiplexed Particle Trapping using Precision Microfluidics”, Society of Rheology Annual Meeting, Baltimore, MD, October 2015.
127. C. M. Schroeder, L. Cuculis, Z. Abil, H. Zhao (poster), “A Molecular View of TALE Protein DNA Search Dynamics”, Packard Annual Meeting, Monterey, CA, September 2015.
126. W. L. Wilson (speaker), C. M. Schroeder, A. Ferguson, “Directed Assembly of Bio-Inspired Supramolecular Materials for Energy Transport and Capture: Mesoscale Construction of Functional Materials in Hydrodynamic Flows”, DOE Contractors Meeting, DOE Biomaterials, Gaithersburg, MD, June 2015.
125. W. L. Wilson, C. M. Schroeder, A. Ferguson, J. Cheng (poster), “Directed Assembly of Bio-Inspired Supramolecular Materials for Energy Transport and Capture”, DOE Contractors Meeting, DOE Biomaterials, Gaithersburg, MD, June 2015.
124. L. Cuculis (speaker), Z. Abil, H. Zhao, C. M. Schroeder, “Direct Observation of TALE Protein Search Dynamics along DNA”, Center for Physics of Living Cells Annual Symposium, University of Illinois at Urbana-Champaign, May 2015.
123. C. M. Schroeder, “New Frontiers in Single Polymer Dynamics”, Center for Advanced Study Annual Spring Symposium, University of Illinois at Urbana-Champaign, April 2015.
122. A. B. Marciel, D. J. Mai, C. M. Schroeder (poster), “Template-directed Synthesis of Structurally Defined Branched Polymer Architectures”, American Physical Society (APS) March Meeting, San Antonio, TX, March 2015. **This presentation was awarded the First Place Prize Poster at the APS Meeting.**
121. S. Kumar (speaker), D. J. Mai, A. B. Marciel, C. M. Schroeder, “Topology-Controlled Relaxation Dynamics of Single Branched Polymers”, American Physical Society (APS) March Meeting, San Antonio, TX, March 2015.
120. K. Hsiao (speaker) and C. M. Schroeder, “Polymer Relaxation and Stretching Dynamics in Semi-dilute DNA Solutions: A Single Molecule Study”, American Physical Society (APS) March Meeting, San Antonio, TX, March 2015.
119. X. Li (speaker), A. Muralidhar, C. M. Schroeder, K. D. Dorfman, “Stretching Wormlike Chains: Interplay Between Chain Stiffness and Excluded Volume in the Long Chain Limit”, American Physical Society (APS) March Meeting, San Antonio, TX, March 2015.
118. Y. Li (speaker), C. A. Brockman, D. Yates, K. Hsiao, M. J. San Francisco, J. A. Kornfield, R. M. Anderson, C. M. Schroeder, G. B. McKenna, “Comparison of Single Molecule Dynamics of Linear and Circular DNA in Microfluidic Planar Extensional Flows”, American Physical Society (APS) March Meeting, San Antonio, TX, March 2015.
117. L. Cuculis (speaker), Z. Abil, H. Zhao, C. M. Schroeder, “Direct Observation of TALE Protein Search Dynamics along DNA”, Biophysical Society Meeting, Baltimore, MD, February 2015.
116. C. M. Schroeder (poster), “New Frontiers in Single Polymer Dynamics”, Gordon Research Conference on Macromolecular Materials, Venture, CA, January 2015.

115. A. B. Marciel, D. J. Mai, C. M. Schroeder (poster), "Synthesis of Biomimetic Branched Polymer Architectures", Materials Research Society (MRS) Fall Meeting, December 2015. **This presentation was nominated for Best Poster for the session.**
114. D. Mai (speaker), A. B. Marciel, C. M. Schroeder "Direct Observation of Dual-Colored DNA Comb Polymers", American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
113. D. Mai, A. B. Marciel, C. M. Schroeder (poster) "Single Molecule Characterization of Dual-Colored DNA Comb Polymers", American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
112. Y. Li (speaker), C. A. Brockman, D. Yates, K. Hsiao, M. J. San Francisco, J. A. Kornfield, R. M. Anderson, C. M. Schroeder, G. B. McKenna, "Comparison of Single Molecule Dynamics of Linear and Circular DNA in Microfluidic Planar Extensional Flows", American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
111. D. Reilly (speaker), S. H. Kim, J. A. Katzenellenbogen, C. M. Schroeder, "Fluorescent Dendrimer Nanoconjugates for Advanced Biological Imaging", American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
110. A. Shenoy (speaker) and C. M. Schroeder, "Control-based Techniques for Microfluidic Particle Trapping", American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
109. A. Shenoy (speaker) and C. M. Schroeder, "Model Predictive Control for Multiplexed Microfluidic Particle Trapping", American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
108. C. M. Schroeder (poster), "New Frontiers in Single Polymer Dynamics and Fluidic-directed Assembly of Soft Materials", Dreyfus Foundation Teacher-Scholar Symposium, New York, NY, October 2014.
107. F. Latinwo, P. Corona, J. Moller, C. M. Schroeder (poster), "Generalized Work Relations for Polymer Solution Rheology", Society of Rheology Annual Meeting, Philadelphia, PA, October 2014. **This presentation was awarded First Place Prize for the Postdoc Poster Competition at the SOR Annual Meeting.**
106. K. Hsiao and C. M. Schroeder (poster), "Polymer Relaxation and Stretching Dynamics in Semi-dilute DNA Solutions: A Single Molecule Study", Society of Rheology Annual Meeting, Philadelphia, PA, October 2014.
105. C. M. Schroeder (speaker), L. Cuculis, Z. Abil, H. Zhao, "Direct Observation of TALE Protein Search Dynamics", 3rd Midwest Single Molecule Workshop, University of Illinois at Urbana-Champaign, Urbana, IL, August 2014.
104. F. Latinwo (speaker) and C. M. Schroeder, "Fluctuation Theorems for Dilute Solution Polymer Dynamics", US National Congress on Theoretical and Applied Mechanics, East Lansing, MI, June 2014.
103. C. M. Schroeder (speaker), Amanda Marciel, W. Wilson, "Fluidic-directed Assembly of pi-conjugated Synthetic Oligopeptides", US National Congress on Theoretical and Applied Mechanics, East Lansing, MI, June 2014.
102. Y. Li, C. A. Brockman, D. Yates, M. San Francisco, J. Kornfield, R. Anderson, C. M. Schroeder, G. McKenna, "Coil-Stretch Transition of Linear and Circular DNA in Planar Extensional Flow", ACS National Meeting, Dallas, TX, April 2014.
101. U. Agrawal, H. E. Walukiewicz, C. V. Rao, C. M. Schroeder, "Super-resolution Imaging of the Bacterial Chemotaxis System in Bacillus Subtilis", APS March Meeting, Denver, CO, March 2014.
100. L. Cuculis, Z. Abil, H. Zhao, C. M. Schroeder, "Direct Observation of Transcription Activator-like Effector (TALE) Protein Dynamics", APS March Meeting, Denver, CO, March 2014.
99. K.-W. Hsiao, C. A. Brockman and C. M. Schroeder, "Direct Observation of Polymer Dynamics in Semi-dilute Solutions", APS March Meeting, Denver, CO, March 2014.

98. F. Latinwo and C. M. Schroeder, "Fluctuation Theorems for Polymer Dynamics in Non-equilibrium Flows", APS March Meeting, Denver, CO, March 2014.
97. E. M. Johnson-Chavarria, U. Agrawal, M. Tanyeri, T. E. Kuhlman and C. M. Schroeder, "Single Cell Response to Time-dependent Stimuli using a Microfluidic Bioreactor", APS March Meeting, Denver, CO, March 2014.
96. D. Mai, A. Marciel, C. M. Schroeder, "Dual-Colored DNA Comb Polymers for Single Molecule Rheology", APS March Meeting, Denver, CO, March 2014.
95. D. Reilly, S. H. Kim, J. A. Katzenellenbogen, and C. M. Schroeder, "Fluorescent Dendrimer Nanoconjugates as Advanced Probes for Biological Imaging", APS March Meeting, Denver, CO, March 2014.
94. A. Marciel, D. Mai, B. Wall, J. D. Tovar, W. Wilson and C. M. Schroeder, "Synthesis and Assembly of Biomimetic Polymers", APS March Meeting, Denver, CO, March 2014.
93. E. M. Johnson-Chavarria and C. M. Schroeder, "Single Cell Response to Periodic Environmental Stimuli Using a Microfluidic Bioreactor", 2014 Biophysical Society Meeting, San Francisco, CA, February 2014.
92. A. B. Marciel, M. Tanyeri, B. D. Wall, J. D. Tovar, C. M. Schroeder, W. L. Wilson (poster), "Fluidic-directed Assembly of Aligned Oligopeptides with pi-conjugated Cores", 2013 Fall MRS Meeting, Materials Research Society, Boston, MA, December 2013.
91. A. B. Marciel (speaker), D. J. Mai, C. M. Schroeder, "Synthesis of Biomimetic Branched Polymer Architectures", 2013 Fall MRS Meeting, Materials Research Society, Boston, MA, December 2013.
90. U. Agrawal (speaker), H. Walukiewicz, C. Rao, and C. M. Schroeder, "Super-Resolution Imaging of the Bacterial Chemotaxis System in *Bacillus Subtilis*", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013.
89. R. Mohan (speaker), C. M. Schroeder, P. J. A. Kenis, "Microfluidic Approach for Antibiotic Susceptibility Testing of Polymicrobial Cultures", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013.
88. F. Latinwo (speaker) and C. M. Schroeder, "Nonequilibrium Free Energy Landscapes of Flowing Polymer Solutions", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013.
87. F. Latinwo (speaker) and C. M. Schroeder, "Crooks Fluctuation Theorem for Flowing Complex Fluids", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013.
86. F. Latinwo and C. M. Schroeder (poster), "Nonequilibrium Work Relations for Dilute Polymer Solutions", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013. **This presentation was awarded First Place Prize for the Student Poster Competition in AIChE Area 1J.**
85. D. J. Mai (speaker), A. B. Marciel, C. M. Schroeder, "Template-Directed Synthesis of Structurally-Defined Branched Biopolymers", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013.
84. D. J. Mai, A. B. Marciel, C. A. Brockman, C. M. Schroeder (poster), "Flexible Branched Polymers for Single Molecule Rheology", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013. **This presentation was awarded Second Place Prize for the Student Poster Competition in AIChE Area 1J.**
83. A. Mukherjee, K. B. Weyant, J. Walker, C. M. Schroeder, "Engineering Flavin-based Photoreceptors as an Emerging Class of Fluorescent Reporter Proteins", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, October 2013.
82. F. Latinwo (speaker) and C. M. Schroeder, "Crooks Fluctuation Theorem for Flowing Complex Fluids", Society of Rheology Annual Meeting, Montreal, CN, October 2013.

81. F. Latinwo (speaker) and C. M. Schroeder, “Nonequilibrium Free Energy Landscapes of Flowing Polymer Solutions”, Society of Rheology Annual Meeting, Montreal, CN, October 2013. **This presentation was awarded Second Place Prize for the Student Poster Competition at the SOR Annual Meeting.**
80. C. M. Schroeder (poster), “Advanced Molecular Probes for Biological Imaging”, Packard Foundation Fellows Meeting, Denver, CO, September 2013.
79. R. Mohan, C. Sanpitakseree, E. Sevgen, A. Mukherjee, C. M. Schroeder, P. J. A. Kenis, “Antibiotic Susceptibility Testing of Polymicrobial Communities using a Multiplexed Microfluidic Platform”, AMN2013: Advances in Microfluidics & Nanofluidics, 2013 Meeting, South Bend, IN, May 2013.
78. A. B. Marciel and C. M. Schroeder (poster), “Synthesis and Assembly of Biomimetic Peptide and Nucleotide-based Polymers”, GRC: Gordon Research Conference on Self-Assembly and Supramolecular Chemistry, Switzerland, May 2013.
77. A. Mukherjee and C. M. Schroeder, “Development of Flavin-based Fluorescent Proteins for Biological Imaging”, Institute for Biological Engineering, 2013 Annual Meeting, Raleigh, NC, March 2013.
76. E. M. Johnson-Chavarria, U. Agrawal, M. Tanyeri, C. M. Schroeder, “Single Cell Microbioreactor for Observing Dynamic Gene Expression and Cell Response to Environment in Bacteria”, Biophysical Society Meeting, Philadelphia, PA, February 2013.
75. F. Latinwo and C. M. Schroeder, “Determining Fundamental Materials Properties from Nonequilibrium Polymer Dynamics”, Society of Rheology Annual Meeting, Pasadena, CA, February 2013.
74. C. A. Brockman and C. M. Schroeder (poster), “Automated Hydrodynamic Trap for Single Molecule Polymer Dynamics”, Society of Rheology Annual Meeting, Pasadena, CA, February 2013.
73. A. Mukherjee and C. M. Schroeder, “Development and Characterization of Flavin-based Fluorescent Proteins as a New Class of Oxygen-independent Biological Imaging Probes”, ICBE: International Conference on Biomolecular Engineering, Fort Lauderdale, FL, January 2013. **This presentation was awarded the Best Poster Award, known as the Biotechnology Journal Award, at the meeting.**
72. A. B. Marciel and C. M. Schroeder (poster), “Template-directed Synthesis and Hierarchical Assembly of Nucleotidomimetic Polymers”, Materials Research Society, Fall Meeting, Boston, MA, December 2012.
71. C. M. Schroeder (speaker) and M. Tanyeri, “Micro and Nanoparticle Trapping and Manipulation with Fluid Flow”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
70. C. A. Brockman and C. M. Schroeder (poster), “Automated Hydrodynamic Trap for Single Molecule Polymer Dynamics”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012. **This presentation was awarded Second Place for the Poster Competition in Area 1J, AIChE.**
69. U. Agrawal (speaker), Y. Kim, S. Kim, J. A. Katzenellenbogen, and C. M. Schroeder, “Dendrimer based Nanoprobes for Super Resolution Fluorescence Microscopy”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
68. U. Agrawal (speaker), E. M. Johnson-Chavarria, A. Mukherjee, M. Tanyeri, and C. M. Schroeder, “Investigating the Effects of Dynamic External Stimuli on Single Cell Fitness and Gene Expression in *Escherichia coli*”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
67. F. Latinwo (speaker) and C. M. Schroeder, “Extracting Fundamental Materials Properties from Rheological Measurements”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.

66. A. Mukherjee, K. B. Weyant, J. A. Walker, and C. M. Schroeder (poster), “Characterization of Flavin-binding Fluorescent Proteins as a New Class of Oxygen-independent Biological Imaging Probes”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
65. C. M. Schroeder, “Single Polymer Dynamics of Designer Molecules: Flexible Polymers, Fluidic Trapping, and Jarzynski Analysis”, International Congress on Rheology, Lisbon, Portugal, August 2012.
64. C. M. Schroeder (poster), “New Horizons in Single Polymer Dynamics: Molecular-level Studies of Flexible & Functionalized Polymers”, Gordon Research Conference on Polymer Physics, Mount Holyoke College, South Hadley, MA, July 2012.
63. R. Mohan, A. Mukherjee, A. V. Desai, J. Lee, C. M. Schroeder, P. J. A. Kenis (poster), “A Multiplexed Microfluidic Platform for Antibiotic Susceptibility Testing”, EMBL Conference - Microfluidics, EMBL Heidelberg, Germany, July 2012.
62. C. M. Schroeder, “Molecular Engineering of Polymeric Materials”, Dow Chemical Company Site Visit, University of Illinois at Urbana-Champaign, Urbana, IL, May 2012.
61. Y. Kim, P. Wang, N. Yi, K. Trenshaw, C. M. Schroeder (poster), “Engineering Zinc Finger Proteins using Accessory Binding Modules”, Biophysical Society Annual Meeting, San Diego, CA, March 2012.
60. Y. Kim, S. Kim, M. Tanyeri, J. A. Katzenellenbogen, C. M. Schroeder (poster), “Photoswitchable Dendrimer Nanoconjugates as Fluorescent Probes for Super-Resolution Microscopy”, Biophysical Society Annual Meeting, San Diego, CA, March 2012.
59. E. M. Johnson-Chavarria, U. Agrawal, M. Tanyeri, C. M. Schroeder (poster), “Investigating the Effects of Dynamic External Stimuli on Single Cell Fitness and Gene Expression in *Escherichia coli*”, Biophysical Society Annual Meeting, San Diego, CA, March 2012.
58. A. Mukherjee (speaker & poster presenter), K. Weyant, C. M. Schroeder, “Directed Evolution of Bright Mutants of a Flavin-binding Oxygen-independent Fluorescent Reporter Protein from *Pseudomonas putida*”, Institute of Biological Engineering Annual Meeting, Indianapolis, IN, March 2012. **This presentation was awarded Second Place for the Graduate Poster Competition.**
57. U. Agrawal (speaker & poster presenter), E. M. Johnson-Chavarria, M. Tanyeri, C. M. Schroeder, “Investigating the Effects of Dynamic External Stimuli on Single Cell Fitness and Gene Expression in *Escherichia coli*”, Institute of Biological Engineering Annual Meeting, Indianapolis, IN, March 2012. **This presentation was awarded Third Place for the Graduate Poster Competition.**
56. R. Mohan, A. Mukherjee, J. Lee, E. Sevgan, C. M. Schroeder, P. J. A. Kenis, “A Multiplexed Microfluidic Platform for Antibiotic Susceptibility Screening”, Institute of Biological Engineering Annual Meeting, Indianapolis, IN, March 2012. **This presentation was awarded the Grand Prize for the Graduate Poster Competition.**
55. C. M. Schroeder, F. Latinwo, C. A. Brockman (poster), “New Directions in Single Polymer Dynamics: Direct Observation of Flexible Polymers and Polyelectrolytes”, Gordon Research Conference on Colloidal, Macromolecular and Polyelectrolyte Solutions, Ventura, CA, February 2012.
54. Y. Kim (speaker), S. Kim, J. A. Katzenellenbogen, C. M. Schroeder, “Site-specific Labeling of Transcription Factors using Non-canonical Amino Acids and Strain-promoted [2+3] Cycloaddition via Copper-free Click Chemistry”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
53. Y. Kim (speaker), S. Kim, M. Tanyeri, J. A. Katzenellenbogen, C. M. Schroeder, “Dye-conjugated Dendrimers as Bright and Photostable Nanoprobes for Fluorescence Microscopy”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
52. Y. Kim, N. Yee, P. Wang, C. M. Schroeder (poster), “Engineering Zinc Finger Proteins for Enhanced Affinity using Accessory Binding Modules”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.

51. B. R. Schudel, M. Tanyeri (speaker), A. Mukherjee, C. M. Schroeder, P. J. A. Kenis, “Multiplexed Detection of Viral Nucleic Acids in a Combinatorial Microfluidic Screening Chip”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
50. M. Tanyeri (speaker) and C. M. Schroeder, “2-D Manipulation of Individual Nanoparticles using Fluid Flow in a Microfluidic Device”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
49. F. Latinwo (speaker) and C. M. Schroeder, “Relating Polymer Dynamics to Non-equilibrium Statistical Mechanics using the Jarzynski Equality”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
48. C. A. Brockman (speaker), F. Latinwo and C. M. Schroeder, “Direct Observation of Flexible Polymer Chain Relaxation using ssDNA”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
47. A. Mukherjee (speaker) and C. M. Schroeder, “Directed Evolution of Bright Mutants of a Flavin Dependent Anaerobic Fluorescent Protein from *Pseudomonas putida*”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
46. R. Mohan (speaker), A. Mukherjee, A. V. Desai, J. Lee, C. M. Schroeder, P. J. A. Kenis, “A Multiplexed Microfluidic Platform Utilizing Optimized Normally Closed Valves for Investigating Microbial Gene Expression”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
45. C. A. Brockman (speaker), F. Latinwo and C. M. Schroeder, “Direct Observation of Flexible Polymer Chain Relaxation using ssDNA”, Society of Rheology Annual Meeting, Cleveland, OH, October 2011.
44. F. Latinwo (speaker) and C. M. Schroeder, “Relating Polymer Dynamics to Non-equilibrium Statistical Mechanics using the Jarzynski Equality”, Society of Rheology Annual Meeting, Cleveland, OH, October 2011.
43. A. Mukherjee, K. Weyant and C. M. Schroeder, “Directed Evolution of Bright Mutants of an Anaerobic Fluorescent Protein”, Biophysics and Computational Biology Symposium, University of Illinois at Urbana-Champaign, October 2011.
42. K. Trenshaw and C. M. Schroeder (poster), “Engineering Biologically Functional Surfaces using ssDNA Polymer Brushes: A Single Molecule Approach”, ChBE Graduate Symposium, University of Illinois at Urbana-Champaign, Urbana, IL, October 2011.
41. E. M. Johnson-Chavarria, U. Agrawal, M. Tanyeri, C. M. Schroeder (poster), “Investigating the Effect of Time-dependent External Stimuli on Cellular Fitness and Single Cell Gene Expression in *Escherichia coli*”, ChBE Graduate Symposium, University of Illinois at Urbana-Champaign, Urbana, IL, October 2011.
40. R. Mohan, A. Mukherjee, A. V. Desai, J. Lee, C. M. Schroeder, P. J. A. Kenis (poster), “A Multiplexed Microfluidic Platform Utilizing Optimized Normally Closed Valves for Investigating Microbial Gene Expression”, MicroTAS Conference, Seattle, WA, October 2011.
39. M. Tanyeri (speaker), M. Ranka, N. Sittipolkul, C. M. Schroeder, “Hydrodynamic Trap for Single Cells and Micro- and Nanoparticles”, MicroTAS Conference, Seattle, WA, October 2011.
38. M. Tanyeri and C. M. Schroeder (poster), “A Microfluidic-based Hydrodynamic Trap: Design and Implementation”, Gordon Research Conference, Physics and Chemistry of Microfluidics, Water Valley, NH, June 2011.
37. A. Mukherjee and C. M. Schroeder (poster), “Directed Evolution of Bright Mutants of an Anaerobic Fluorescent Protein from *Pseudomonas putida*”, IGB Fellows Symposium, Institute for Genomic Biology, University of Illinois, Urbana, IL, May 2011. **Awarded First Place for the Symposium.**

36. U. Agrawal, M. Tanyeri, E. M. Johnson-Chavarria and C. M. Schroeder (poster), “Microfluidic Trap for Single Cell Micromanipulation and Analysis”, IGB Fellows Symposium, Institute for Genomic Biology, University of Illinois, Urbana, IL, May 2011. **Awarded Third Place for the Symposium.**
35. Y. Kim, M. Tanyeri, C. M. Schroeder (poster), “Real-time, Single Molecule-based DNA Sequencing Using Bright and Photostable Nanoprobes”, NIH National Human Genome Research Institute, Advanced DNA Sequencing Meeting, San Diego, CA April 6, 2011.
34. M. Ranka, M. Tanyeri, N. Sittipolkul, C. M. Schroeder, “A Microfluidic-based Wheatstone Bridge”, University of Illinois Undergraduate Research Symposium, Urbana, IL, April 2011. **Awarded Third Place Prize for the Symposium.**
33. Y. Kim (speaker), S. Kim, J. A. Katzenellenbogen, C. M. Schroeder, “Site-specific Labeling of Tandem Repeating C2H2 Zinc Finger Proteins using Non-Natural Amino Acids”, American Chemical Society, Anaheim, CA, March 2011.
32. Y. Kim, S. Kim, M. Tanyeri, J. A. Katzenellenbogen, C. M. Schroeder (poster), “Dye-conjugated Dendrimers as Bright and Photostable Nanoprobes for Fluorescence Microscopy and Imaging”, Biophysical Society, Baltimore, MD, March 2011.
31. M. Tanyeri, E. M. Johnson-Chavarria, U. Agrawal and C. M. Schroeder (poster), “Hydrodynamic Trap for Single Cells and Micro- and Nanoparticles”, Biophysical Society, Baltimore, MD, March 2011.
30. M. Tanyeri (speaker), E. M. Johnson-Chavarria and C. M. Schroeder, “Hydrodynamic Trap for Single Cells and Micro- and Nanoparticles”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
29. C. M. Schroeder (speaker), C. A. Brockman, S. J. Kim, F. Latinwo, “Direct Observation of Flexible Polymer Chain Dynamics using Single Stranded DNA”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
28. C. M. Schroeder (speaker), C. A. Brockman, S. J. Kim, F. Latinwo, “Direct Observation of Flexible Polymer Chain Dynamics using Single Stranded DNA”, Society of Rheology Annual Meeting, Santa Fe, NM, October 2010.
27. A. Marciel, C. A. Brockman, F. Latinwo, S. Kim, C. M. Schroeder, “Synthesis & Direct Visualization of Non-Natural Biopolymers” (poster), 7th Peptoid Summit, Molecular Foundry, Lawrence Berkeley National Laboratory, August 8, 2010.
26. M. Tanyeri (speaker), E. M. Johnson-Chavarria and C. M. Schroeder, “Hydrodynamic Trap for Single Cells, Particles and Molecules”, Biophysics Symposium, University of Illinois at Urbana-Champaign, May 2010. **Awarded “Best Talk” for the Symposium.**
25. E. M. Johnson-Chavarria, P. Hong, M. Tanyeri, I. K. O. Cann, R. Mackie and C. M. Schroeder, “Morphological Cell Sorting using a Microfluidic Trap” (poster), Biophysics Symposium, University of Illinois at Urbana-Champaign, May 2010.
24. M. Tanyeri, E. Johnson-Chavarria and C. M. Schroeder, “Hydrodynamic Trap for Single Cells, Particles and Molecules” (poster), Bioengineering Day, University of Illinois at Urbana-Champaign, April 2010.
23. M. Tanyeri (speaker), E. Johnson-Chavarria and C. M. Schroeder, “Hydrodynamic Trap for Single Cells, Particles and Molecules”, American Physical Society Meeting, Portland, OR, March 2010.
22. C. M. Schroeder, M. Tanyeri and E. Johnson-Chavarria, “Hydrodynamic Trap for Single Cells, Particles and Molecules” (poster), Gordon Research Conference: Colloidal, Macromolecular, & Polyelectrolyte Solutions, Ventura, CA, February 2010.
21. M. Tanyeri, E. Johnson-Chavarria and C. M. Schroeder, “Hydrodynamic Trap for Single Cells, Particles and Molecules” (poster), Biophysical Society Meeting, San Francisco, CA, February 2010.

20. M. Tanyeri, E. Johnson-Chavarria and C. M. Schroeder, "Hydrodynamic Trap for Single Cells, Particles and Molecules" (poster), Microfluidics: Electrokinetic and Interfacial Phenomena, Institute for Mathematics and Its Applications, Minneapolis, MN, December 2009.
19. I. K. O. Cann (speaker), C. M. Schroeder and R. I. Mackie, "Enzymatic Depolymerization of Biomass for Biofuels", Energy Biosciences Institute Meeting, Berkeley, CA, December 2009.
18. M. Tanyeri and C. M. Schroeder (speaker), "Hydrodynamic Trap for Single Cells and Particles", American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
17. B. R. Schudel (speaker), M. Tanyeri, C. M. Schroeder, P. J. A. Kenis, "Microfluidic Chips for Multiplexed Viral DNA Detection", American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
16. B. R. Schudel (speaker), M. Tanyeri, C. M. Schroeder, P. J. A. Kenis, "Fluorescence Microscopy for Detection of Molecular Beacons in a Multiplexed Microfluidic Device", Miniaturized Systems for Chemistry and Life Sciences (MicroTAS), Jeju, Korea, November 2009.
15. D. Dodd (speaker), S. Kiyonari, Y. Han, C. M. Schroeder, R. I. Mackie, I. K. O. Cann, "Reconstitution of an Enzyme Mixture from the Fiber Degrading Rumen Bacterium, *Prevotella bryantii* B₁₄ which is Capable of Deconstructing Hemicellulose", American Institute of Chemical Engineers, Chicago Meeting, Chicago, IL, October 6, 2009.
14. I. K. O. Cann, A. Mukherjee, L. Lin, Y. Lin, W. M. Metcalf, C. M. Schroeder, "ORC/Cdc6-1 is Essential for Cell Viability in *Methanosarcina acetivorans*", Gordon Research Conference: Archaea: Ecology, Metabolism & Molecular Biology, Waterville Valley, NH, July 2009.
13. I. K. O. Cann (speaker), S. Kiyonari, D. Dodd, Y. Han, C. M. Schroeder, R. I. Mackie, "Reconstruction of the Hemicellulose Complex from the Fiber Degrading Bacterium *Prevotella bryantii* B₁₄", Society for Industrial Microbiology, Toronto, ON, July 2009.
12. C. M. Schroeder (speaker), S. Kim, X. S. Xie, "DNA Polymerization Dynamics of HIV-1 Reverse Transcriptase: A Single Molecule Study", American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 17, 2008.
11. C. M. Schroeder, S. Kim, P. C. Blainey, X. S. Xie, "Replicating through RNA Polymerase Molecules on Single DNA Templates" (poster), American Chemical Society Annual Meeting, Boston, MA, August 2007.
10. C. M. Schroeder, S. Kim, P. C. Blainey, X. S. Xie, "Single Molecule Studies of DNA Replication: Multiplexed Assay Development and Replication by Phi29 and HIV-1 Reverse Transcriptase" (poster), Single Molecule Biophysics Conference, Aspen, CO, February 2007.
9. C. M. Schroeder (speaker), S. J. Kim, P. C. Blainey, and X. S. Xie, "Single Molecule Kinetics of Reverse Transcriptase", AIChE Annual Meeting, Cincinnati, OH, November 2005.
8. C. M. Schroeder and X. S. Xie, "Collision between a DNA Replication Fork and an RNA Polymerase Ternary Complex" (poster), AIChE Annual Meeting, Cincinnati, OH, November 2005.
7. C. M. Schroeder, S. J. Kim, P. C. Blainey, X. S. Xie, "Single Molecule Kinetics of Reverse Transcriptase" (poster), 19th Symposium of The Protein Society, Boston, MA, July 2005.
6. E. S. G. Shaqfeh (speaker), C. M. Schroeder, R. E. Teixeira, S. Chu, "The Effects of Hydrodynamic Interactions in Shear and Linear Mixed Flows: Single Molecule DNA Experiments and Brownian Dynamics Simulation", AIChE Annual Meeting, Austin, TX, November 2004.
5. C. M. Schroeder, E. S. G. Shaqfeh, S. Chu, "Observation of Polymer Conformation Hysteresis" (poster), Gordon Research Conference: Colloidal, Macromolecular, & Polyelectrolyte Solutions, Ventura, CA, February 2004.

4. C. M. Schroeder (speaker), H. P. Babcock, E. S. G. Shaqfeh, S. Chu, "Polymer Configuration Hysteresis in Extensional Flow: A Single Molecule Study", AIChE Annual Meeting, Complex and Biofluid Dynamics Session, San Francisco, CA, November 2003.
3. C. M. Schroeder (speaker), E. S. G. Shaqfeh, S. Chu, "Influence of Hydrodynamic Interactions on the Coil-Stretch Transition of Polymers in Extensional and Mixed Flows", 75th Annual Meeting, Society of Rheology, Pittsburgh, PA, October 2003.
2. C. M. Schroeder (speaker), S. Chu, E. S. G. Shaqfeh, "The Effects of Hydrodynamic Interactions on Polymer Dynamics in Extensional Flows", 74th Annual Meeting, Society of Rheology, Minneapolis, MN, October 2002.
1. C. M. Schroeder (speaker), H. P. Babcock, J. S. Hur, S. Chu, E. S. G. Shaqfeh, "Polymer Dynamics in Semi-Dilute DNA Solutions in a Planar Extensional Flow", 72nd Annual Meeting, Society of Rheology, Hilton Head Island, SC, February 2001.

PH.D. STUDENTS SUPERVISED

1. Christopher Brockman, Ph.D, ChBE, 2013, "Single Molecule Studies of Flexible Polymer Systems". Current position: Research Engineer at Intel Corporation, Portland OR.
2. Arnab Mukherjee, Ph.D., ChBE, 2014, "New Directions in Biological Imaging: Engineering, Characterization, and Discovery of LOV-based Fluorescent Proteins". Current position: Assistant Professor, Department of Chemical Engineering, University of California-Santa Barbara.
3. Folarin Latinwo, Ph.D., ChBE, 2014, "Fluctuation Theorems and Work Relations for Single Polymer Rheology". Postdoctoral Fellow at Princeton University (Debenedetti Group). Current position: Research Engineer, Synopsys.
4. Eric Johnson-Chavarria, Ph.D., Biophysics, 2014, "Automated Hydrodynamic Trap for Single Cell Analysis in Free Solution". Current position: Program Director at National Institutes of Health, NIH/NCI.
5. Utsav Agrawal, Ph.D., ChBE, 2015, "Probing Surface Protein Patterning in Biological Systems using Fluorescence Nanoscopy". Current position: Research Engineer at Intel Corporation, Portland, OR.
6. Amanda Marciel, Ph.D., Biophysics, 2015, "Synthesis and Supramolecular Assembly of Biomimetic Polymers". Current position: Assistant Professor, Rice University, Department of Chemical and Biomolecular Engineering
7. Daniel Reilly, Ph.D., ChBE, 2016, "Advances in Single Molecule Spectroscopy and Microscopy for Biological Imaging and Polymer Characterization". Current position: Research Associate at the University of Chicago (Liarski Group).
8. Luke Cuculis, Ph.D., Chemistry, 2016, "Single Molecule Investigation of Transcription Activator-like Effector Search Dynamics". Current position: Consultant, Boston Consulting Group (BCG).
9. Danielle Mai, Ph.D., ChBE, 2016, "Single Molecule Studies of Branched Polymer Dynamics". Current position: Assistant Professor, Department of Chemical Engineering, Stanford University,
10. Kai-Wen Hsiao, Ph.D. ChBE, 2017, "Single Polymer Dynamics in Semi-dilute Solutions: Linear and Ring Polymers", Current position: Research Engineer at Apple, Cupertino, CA.
11. Anish Shenoy, Ph.D., MechSE, 2017, "Development and Application of the Stokes Trap for Measurement of Interparticle Interactions", Current position: Research Engineer at Intel Corporation, Portland OR.
12. Yuecheng (Peter) Zhou, MatSE, 2019, "Single Molecule Studies of Polymers and Self-Assembling Materials: Effects of Chain Topology and Entanglements", Current position: Postdoctoral Fellow, Stanford University (Cui Group, Chemistry).

13. Songsong Li, MatSE, 2020, “Single Molecule Studies of Molecular Electronics and Biohybrid Materials”, Current position: Postdoctoral Researcher at University of Illinois at Urbana-Champaign.
14. Shivani Patel, ChBE, 2020 “Single Molecule Studies of Branched Polymer Dynamics in Non-Dilute Solutions”, Current position: Research Engineer at Intel Corporation, Portland OR.
15. Michael Tu, ChBE.
16. Dinesh Kumar, ChBE.
17. Edward Jira, ChBE.
18. Hao Yu, ChBE (co-advised with Jeff Moore).
19. Caroline Li, ChBE.
20. Jonathan Deutsch, Biophysics.
21. Kasra Tabatabaei, Biophysics.
22. Seungjoo Yi, MatSE
23. Hao (Alvin) Yang, MatSE
24. Hung Nguyen, MatSE

M.S. STUDENTS SUPERVISED

1. Abiodun Oki, M.S., ChBE, 2014.
2. Sun Ju Kim, M.S., ChBE, 2010 “Single Molecule Force Extension Measurement on Semi-Flexible Biopolymers using Magnetic Tweezers”. Current position: Research Engineer at Amore Pacific.
3. Kyle Trenshaw, M.S., ChBE, 2011, “Tuning DNA Binding and Gene Expression using Zinc Finger Proteins and Engineered Promoters”. Current position: Educational Development Specialist, Center for Excellence in Teaching and Learning, Natural Sciences and Engineering, University of Rochester.
4. Jin Yu, M.S., MatSE, 2018.
5. Wei Ge, M.S. (3+2 Tsinghua Univ.), 2017-19

POSTDOCTORAL FELLOWS & RESEARCH ASSOCIATES SUPERVISED

1. Melikhan Tanyeri, Ph.D. University of California-Davis, 9/2008-7/2013. Current position: Assistant Professor, Duquesne University, Department of Biomedical Engineering.
2. Younghoon Kim, Ph.D. University of Pennsylvania, 1/2009-6/2012. Current position: Staff Scientist, Genzyme.
3. Kejia Chen, Ph.D. University of Illinois at Urbana-Champaign, 10/2015-2/2017. Current position: Research Engineer at Google.
4. Subhalakshmi Kumar, Ph.D. University of Illinois at Urbana-Champaign, 11/2014-10/2017. Current position: Senior Research Engineer at Inprentus.
5. Bo Li, Ph.D. Georgia Tech, 7/2015-8/2020. Current position: Kennesaw State University.
6. Piyush Singh, Ph.D. University of Illinois at Urbana-Champaign, 5/2019-present.
7. Michael Jacobs, Ph.D. University of California, Berkeley, 6/2019-present.
8. Gabriel Burks, Ph.D. Drexel University, 9/2020-present.

UNDERGRADUATE STUDENTS SUPERVISED

1. Mikhail Ranka, ChBE, Spring 2009-Spring 2011, Senior Honors Thesis. Ph.D. MIT.
2. Natawan Sittipolkul, ChBE, Spring 2009-Spring 2011, Senior Honors Thesis
3. Nathan Yee, ChBE, Fall 2009-Spring 2011, Senior Honors Thesis. Ph.D. MIT.
4. Kevin Weyant, ChBE, Fall 2010-Spring 2014, Senior Honors Thesis. Ph.D. Cornell.
5. Joshua Walker, ChBE, Fall 2010-Spring 2013, Senior Honors Thesis. Ph.D. Cornell.
6. Dean Ferracane, ChBE, Fall 2010-Spring 2012, Senior Honors Thesis
7. Nicolette Iatropoulos, ChBE, Fall 2010-Fall 2011, Research project
8. Cassie Schneider, ChBE, Fall 2009-Spring 2011, Research project
9. Cameron Butler, ChBE, Fall 2010-Spring 2013, Research project
10. Parul Koul, MatSE, Fall 2010-Spring 2012, Research project
11. Patrick Corona, ChBE, Fall 2010-Fall 2014, Senior Honors Thesis. Ph.D. UCSB.
12. Anthony Abbonato, Chemistry, Fall 2012-Fall 2013, Research project
13. Joshua Moller, ChBE, Fall 2012-Spring 2015, Senior Honors Thesis. Ph.D. UChicago (IME).
14. Sarah Kuhl, ChBE, Fall 2012-Spring 2014, Research Project
15. Lily Chen, ChBE, Fall 2013-Spring 2015, Senior Honors Thesis
16. Matthew Fischer, ChBE, Fall 2013-Spring 2014, Research Project
17. Andrew Wegner, ChBE, Fall 2013-Spring 2016, Research Project
18. Elijah Karvalis, ChBE, Fall 2014-Fall 2015, Research Project. Ph.D. MIT.
19. Shuijing Liu, Fall 2015-Spring 2016, Research Project
20. Yi Ren, Fall 2015-Spring 2016, Research Project.
21. Zhiwei Zhang, Fall 2015-Spring 2016, Research Project
22. Zijie Wu, ChBE, Fall 2015-Fall 2017, Research Project. Ph.D. Univ. Delaware.
23. Eugene Yoon, ChBE, Fall 2017, Research Project
24. Channing Richter, ChBE, Fall 2017-Spring 2020. Ph.D Univ. Delaware.
25. Christopher Rudolphi, ChBE, Summer 2018-Spring 2020, Research Project
26. Aaron Merlin, ChBE, Summer 2018-present, Research Project
27. Noah Hopkins, ChBE, Fall 2018-present, Research Project