

# CHARLES M. SCHROEDER III

---

Eugene Higgins Professor  
Department of Chemical and Biological Engineering  
Princeton University  
35 Ivy Lane, F321 CBE Building  
Princeton, NJ 08544

email: [cschroeder@princeton.edu](mailto:cschroeder@princeton.edu)  
tel: (609) 258-4586  
<http://schroeder.cbe.princeton.edu>

## AFFILIATIONS

Department of Chemical and Biological Engineering  
Princeton Materials Institute, Associated Faculty  
**Princeton University**

## RESEARCH INTERESTS

Soft materials, single polymer dynamics, molecular rheology, microhydrodynamics  
Materials discovery, sequence-defined polymers, capillary suspensions, lipid vesicles  
Bioelectronics, molecular electronics, ion and electron transport in proteins

## 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

- 8/25-present Eugene Higgins Professor (8/26-)  
Director of Graduate Studies (8/26-)  
Department of Chemical and Biological Engineering  
Associated Faculty, Princeton Materials Institute (PMI)  
**Princeton University**, Princeton, NJ, 08544
- 8/20-8/25 James Economy Professor, Department of Materials Science and Engineering  
Professor, Department of Chemical and Biomolecular Engineering  
**University of Illinois Urbana-Champaign**, Urbana, IL, 61801
- 8/18-8/25 Co-Chair, Molecular Science and Engineering  
Leader, AI for Materials Discovery Group (AIM)  
Beckman Institute for Advanced Science and Technology  
**University of Illinois Urbana-Champaign**, Urbana, IL, 61801
- 9/24-12/24 Visiting Fellow, Department of Chemical and Biological Engineering  
**Princeton University**, Princeton, NJ, 08544
- 8/17-8/20 Professor and Ray and Beverly Mentzer Faculty Scholar  
Department of Chemical and Biomolecular Engineering  
**University of Illinois 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 and Biomolecular Engineering  
**University of Illinois Urbana-Champaign**, Urbana, IL, 61801

|             |                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8/08-8/14   | Assistant Professor, Department of Chemical and Biomolecular Engineering<br><b>University of Illinois Urbana-Champaign</b> , Urbana, IL, 61801                          |
| 12/07-7/08  | Postdoctoral Fellow, Department of Chemical Engineering<br><b>University of California, Berkeley</b> , Berkeley, CA, 94720                                              |
| 11/04-11/07 | Postdoctoral Fellow, NIH K99 Pathway to Independence Award Recipient<br>Department of Chemistry and Chemical Biology<br><b>Harvard University</b> , Cambridge, MA 02138 |
| 3/00-11/04  | Graduate Research Assistant, Department of Chemical Engineering<br><b>Stanford University</b> , Stanford, CA 94305                                                      |
| 5/99-8/99   | Research Engineer Intern, Chemical/Mechanical Polish, Fab 15 (Summer 1999)<br><b>Intel Corporation</b> , Portland, OR 97007                                             |
| 5/98-8/98   | Research Engineer Intern, Photolithography, Fab 15 (Summer 1998)<br><b>Intel Corporation</b> , Portland, OR 97007                                                       |
| 5/97-5/99   | Research Assistant, Department of Chemical Engineering (Jhon Group & Tilton Group)<br><b>Carnegie Mellon University</b> , Pittsburgh, PA 15213                          |

## HONORS AND AWARDS

### Honorary Societies

|      |                                                                    |
|------|--------------------------------------------------------------------|
| 2024 | Associate Member, Institute for Non-Newtonian Fluid Mechanics (UK) |
| 2023 | Fellow, American Physical Society (APS)                            |
| 2023 | Fellow, Society of Rheology (SOR)                                  |
| 2022 | Fellow, American Association for the Advancement of Science (AAAS) |

### Awards & Distinctions

|      |                                                                                         |
|------|-----------------------------------------------------------------------------------------|
| 2026 | Eugene Higgins Professor, Princeton University                                          |
| 2023 | Vision and Spirit Award, Beckman Institute for Advanced Science and Technology          |
| 2021 | James Economy Professor, University of Illinois Urbana-Champaign                        |
| 2020 | List of Teachers Ranked as Excellent, University of Illinois, 2020, 2011, 2008          |
| 2019 | Society of Rheology Publication Award                                                   |
| 2019 | Ray & Beverly Mentzer Professor, University of Illinois Urbana-Champaign                |
| 2014 | Beckman Fellow, Center for Advanced Study, University of Illinois Urbana-Champaign      |
| 2014 | Outstanding Advisors, College of Engineering, University of Illinois Urbana-Champaign   |
| 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 (FOE NAE)                |
| 2011 | David and Lucile Packard Fellowship for Science and Engineering                         |
| 2008 | Tomorrow's PI, <i>Genome Technology</i> magazine                                        |
| 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 (equivalent to <i>summa cum laude</i> ), Carnegie Mellon University   |
| 1998 | Andrew Carnegie Scholar, Carnegie Mellon University                                     |
| 1998 | Phi Kappa Phi Honor Society                                                             |
| 1997 | Donald F. Othmer Academic Excellence Award, AIChE                                       |

## TEXTBOOKS

1. E. S. G. Shaqfeh and C. M. Schroeder, *An Introduction to Microhydrodynamics*, in preparation.

## PUBLICATIONS - PEER REVIEWED JOURNAL ARTICLES

(As of 8/10/2026, Total publications: 145; Google Scholar h-index: 47; i10-index: 115; Total citations: 7661; \*corresponding author)

145. R. Samajdar, H. Chhabra, M. Meigooni, S. Yi, X. Liu, J. L. Wu, E. Tajkhorshid, **C. M. Schroeder\***, "Role of Stereochemistry on Electron Transport in Peptides", submitted, bioRxiv (2026).
144. H.-N. Wang, B. Lam, H.-X. Fan, Y. Zhou, C.-C. Tsai, T. Meng, O. Han, H. Yang, A.R. Ellis-Mohr, L. R. Varshney, **C. M. Schroeder**, K. Zhang\*, and Q. Cao\*, "Deterministic Three-dimensional Neural Microcircuits for Logic Computation", submitted (2026).
143. S. Rani, H. V. Nguyen, L. Zhu, S. Das, **C. M. Schroeder**, J. Rodríguez-López, "Deciphering Redox Pathways in Aqueous Microdroplets: Simultaneous Production of Hydrogen Peroxide, Hydrogen, and Organics from Ethyl Palmitate as Renewable Feedstock", submitted (2026).
142. G. Hazen, S. Li, S. Rani, H. V. Nguyen, E. Gilhuly, F. Rangel, A. Asserghine, C. M. Schroeder, R. S. Assary, J. Rodríguez-López, "Accelerated Hydrogen Peroxide Production in Sonicated Emulsive Water Microdroplets Using Short-Chain Alcohols as Interfacial Modifiers", submitted (2026).
141. S. Das, Y. Zhou, S. W. Croslow, S. Li, D. Kim, A. Santiago-Carboney, S. Huang, H. V. Nguyen, **C. M. Schroeder**, J. V. Sweedler, R. S. Assary, J. S. Moore, J. Rodríguez-López\*, "One-Step, High-Yield Deconstruction of Kraft Lignin into a Redox-Active Small Molecule Using Sonicated Emulsive Water Microdroplets", submitted (2026).
140. C. Liu, J. Smith, B. Argun, P. Bal, D. Liu, J. Li, P. Pan, R. Kollarigowda, H. Wang, A. Das, **C. M. Schroeder**, D. Krogstad, P. Braun, A. Statt, Q. Chen, "Visualizing Nanoscale Heterogeneity and Dynamics in Responsive Polymer Hydrogel Nanoparticles by Liquid-Phase TEM", submitted (2026).
139. H. Yang, Y. Li, J. Ren, Y. Shi, **C. M. Schroeder\***, "Self-Assembled Lipids as Soft Dielectrics", *Advanced Functional Materials*, in press (2026).
138. S. Jiang, J. Wu, **C. M. Schroeder**, M. A. Webb, "Range-Aware Bayesian Optimization for Discovering Diverse Designs within Target Property Windows", *Digital Discovery*, in press (2026).
137. S. Jang, J. Wu, N. E. Jackson, **C. M. Schroeder\***, C. M. Evans\*, "Enhanced Crystallinity and Electrical Conductivity in Conjugated Polymers via Dynamic Covalent Bond Exchange", *Macromolecules* DOI: acs.macromol.6c00291 (2026).
136. J. Deutsch, D. Hilger, J. Janetzko, **C. M. Schroeder**, S. Chu, B. K. Kobilka, R. V. Shrivnaraine\*, "Ligand-dependent G Protein Dynamics Underlying Opioid Signaling Efficacy", *Nature Structural & Molecular Biology*, in press (2026).
135. S. Kim, **C. M. Schroeder**, N. E. Jackson, "Generative Multi-Property Refinement of Polymer Chemistries", *Macromolecules*, 59, 6759-6771 (2026).
134. R. Samajdar, H. Nadeem, N. Moghe, D. Shukla\*, **C. M. Schroeder\***, "Solvent Environment Influences Molecular Conformation and Electron Transport in Peptides", *Journal of Physical Chemistry Letters*, 17, 6004-6013 (2026).
133. B. Prempin, R. Samajdar, H. Chhabra, M. Meigooni, A. Aksimentiev, E. Tajkhorshid, J. S. Moore, **C. M. Schroeder\***, "Single-Molecule Electron Transport in Peptoids", *Journal of Physical Chemistry B*, 130, 3054-3064 (2026).
132. S. Chaudhary, D. Fraggadakis\*, **C. M. Schroeder\***, "Stability of Particle Clusters Bound by Capillary Bridges in Extensional Flow", *Physical Review Fluids*, 11, L032301 (2026).

131. **C. M. Schroeder\***, R. Everaers, K. Kremer, M. Kruteva, C. N. Likos, G. B. McKenna, T. O'Connor, J. Ravi Prakash, D. Richter, R. Robertson-Anderson, M. Rubinstein, K. S. Schweizer, D. Vlassopoulos, "Ring Polymer Physics and Rheology: Challenges and Opportunities", *Journal of Rheology*, 70, 183-216 (2026).
130. J. L. Wu, D. M. Friday, C. Hwang, S. Yi, T. C. Torres-Flores, M. D. Burke, Y. Diao, **C. M. Schroeder**, N. E. Jackson\*, "Democratizing Machine Learning in Chemistry with Community-Engaged Test Sets", *Digital Discovery*, 5, 304-309 (2026).
129. G. Singhal, L. Lao, M. L. Pacholski, H. Shah, J. Gu, B. Caruso, F. Aguirre-Vargas, P. K. Singh, K. A. Patankar, S. A. Rogers, **C. M. Schroeder**, P. V. Braun\*, "Interfacial Energy and Composition Controlled Self-stratification in Polyurethane Coatings", *Macromolecular Materials and Engineering*, 0:e00424, DOI: 10.1002/mame.202500424 (2025).
128. R. Samajdar, X. Liu, K. Kuyama, Y. Kidokoro, F. Takeda, I. Okamoto, M. Kawahata, K. Katagiri, J. S. Moore, A. Tanatani\*, **C. M. Schroeder\***, "Aromatic Amide Foldamers Show Conformation-dependent Electronic Properties", *ChemPhysChem*, 26, e202500672 (2025).
127. J. Sima, C. Pan, S. Kasra Tabatabaei, A. G. Hernandez, **C. M. Schroeder**, and O. Milenkovic\*, "DNA Tails for Molecular Flash Memory", *IEEE Journal on Selected Areas in Information Theory*, DOI: 10.1109/JSAIT.2025.3616940 (2025).
126. R. Samajdar, H. Yang, S. Yi, C.-I. Wang, S. T. Putnam, M. A. Pence, G. S. Lindsay, M. Meigooni, X. Liu, J. Ren, J. S. Moore, E. Tajkhorshid, A. A. Gewirth, J. Rodríguez-Lopez, N. E. Jackson, **C. M. Schroeder\***, "Electrochemically Mediated Au-C(sp<sup>2</sup>) Anchors for Molecular Electronics", *Journal of Physical Chemistry C*, 129, 17458-17471 (2025).
125. S. Jang, R.-B. Tsai, **C. M. Schroeder**, C. M. Evans\*, "Anion and Cation Size Effects on Viscoelasticity and Ion Transport of Imine Vitriimer Electrolytes", *Chemistry of Materials*, 37, 7037-7048 (2025).
124. S. Qu, Zihao Ou, Y. Savsatli, L. Yao, Y. Cao, E. C. Montoto, H. Yu, J. Hui, B. Li, J. A. N. T. Soares, L. Kisley, B. Bailey, E. A. Murphy, J. Liu, C. M. Evans, **C. M. Schroeder**, J. Rodríguez-López, J. S. Moore, Q. Chen, P. V. Braun\*, "Visualizing Energy Transfer Between Redox-Active Colloids", *Science Advances*, 11, eady7716 (2025).
123. Z. Bian, E. Gomez, J. Ren, T. Chatterjee, H. Yang, **C. M. Schroeder**, S. Nie, S. Link, M. Gruebele\*, "Ultrathin Atomically Flat Gold Film for Scanning Tunneling Microscopy and Single Particle Fluorescence Spectroscopy", *Langmuir*, 41, 16000-16008 (2025).
122. H. Yang, X. Liu, M. Meigooni, L. Zhang, J. Ren, Q. Chen, M. Losego, E. Tajkhorshid, J. S. Moore, **C. M. Schroeder\***, "Amino Acid Sequence Controls Enhanced Electron Transport in Heme-Binding Peptide Monolayers", *ACS Central Science*, 11, 612-621 (2025).
121. C. Lay, G. Burks, **C. M. Schroeder**, Z. Li, J. Barrick, A. Karim, M. Jewett\*, "Cell-free Expression of Soluble Leafhopper Proteins from Brochosomes", *ACS Synthetic Biology*, 14, 987-994 (2025).
120. S. Kim, **C. M. Schroeder**, N. E. Jackson\*, "Functional Monomer Design for Synthetically Accessible Polymers", *Chemical Science*, 16, 4755 (2025).
119. N. H. Angello, D. M. Friday, C. Hwang, S. Yi, A. H. Cheng, T. C. Torres Flores, E. R. Jira, W. Wang, A. Aspuru-Guzik, M. D. Burke\*, **C. M. Schroeder\***, Y. Diao\*, N. E. Jackson\*, "Closed-Loop Transfer Enables AI to Yield Chemical Knowledge", *Nature*, 633, 351-358 (2024).

This article was featured in *IEEE Spectrum*, *Science Daily*, *Chem Europe*, *Sciencenet*, *ScienMag*, *Phys.Org*, *EurekAlert*, and several other outlets.

118. X. Liu, H. Yang, H. Harb, R. Samajdar, T. J. Woods, O. Lin, Q. Chen, A. I. B. Romo, J. Rodríguez-López, R. S. Assary, J. S. Moore, **C. M. Schroeder\***, "Shape-persistent Molecules Exhibit Nanogap-independent Conductance in Single-molecule Junctions", *Nature Chemistry* (2024). DOI: 10.1038/s41557-024-01619-5

117. S. Jang, **C. M. Schroeder**, C. M. Evans\*, “Multiple Energy Dissipation Modes in Dynamic Polymer Networks with Neutral and Ionic Junctions”, *Chemical Communications*, 60, 8431-8434 (2024).
116. R. Samajdar, M. Meigooni, H. Yang, J. Li, M. A. Mosquera, N. E. Jackson, E. Tajkhorshid, **C. M. Schroeder**\*, “Secondary Structure Determines Electron Transport in Peptides”, *Proceedings of the National Academy of Sciences*, 121, e2403324121 (2024).
115. S. Chaudhary, S. S. Velankar, **C. M. Schroeder**\*, “Dynamics of Meniscus-Bound Particle Clusters in Extensional Flow”, *Journal of Rheology*, 68, 397-413 (2024).

This article was featured on the front cover of *Journal of Rheology*.

114. F. Kalutanirige, J. He, L. Yao, S. Cotty, S. Zhou, J. Smith, E. Tajkhorshid, **C. M. Schroeder**, J. S. Moore, H. An, X. Su, Y. Li, Q. Chen\*, “Beyond Nothingness: Formation and Functional Relevance of Voids in Polymer Films”, *Nature Communications*, 15, 2852 (2024).
113. S. Kim and **C. M. Schroeder**\*, “Scaling Up Discovery”, *Nature Synthesis*, 3, 562–564 (2024). News and Views Article.
112. I. Oh, M. Pence, N. Lukhanin, O. Rodriguez, **C. M. Schroeder**\*, J. Rodriguez-Lopez\*, “The Electrolab: An Open-Source, Modular Electrochemical Platform Using a Solution Handling Robot for Automated Characterization of Redox-Active Electrolytes”, *Device*, 1, 100103 (2023).
111. S. Jang, E. Hernandez Alvarez, B. Jing, C. Shen, A. Schleife, **C. M. Schroeder**\*, C. Evans\*, “Control of Lithium Salt Partitioning, Coordination, and Solvation in Vitriimer Electrolytes”, *Chemistry of Materials*, 35, 8039-8049 (2023).
110. Y. Tan, J. Li, S. Li, H. Yang, T. Chi, S. B. Shiring, K. Liu, B. M. Savoie, B. W. Boudouris\*, **C. M. Schroeder**\*, “Enhanced Electron Transport in Nonconjugated Radical Oligomers Occurs by Tunneling”, *Nano Letters*, 23, 5951-5958 (2023).
109. S. Kim, **C. M. Schroeder**, N. E. Jackson, “Open Macromolecular Genome: Generative Design of Synthetically Accessible Polymers”, *ACS Polymers Au*, 3, 318-330 (2023).
108. J. Li, B.-J. Peng, S. Li, D. P. Tabor, L. Fang\*, **C. M. Schroeder**\*, “Ladder-type Conjugated Molecules as Robust Multi-state Single-Molecule Switches”, *Chem*, 9, 1-16 (2023).
107. M. Q. Tu, O. Davydovich, B. Mei, P. K. Singh, G. S. Grest, K. S. Schweizer, T. C. O’Connor, **C. M. Schroeder**\*, “Intermolecular Interactions Drive Unexpected Slow Relaxation Dynamics in Pure Ring Polymers”, *ACS Polymers Au*, 3, 307-317 (2023).
106. M. Q. Tu, H. V. Nguyen, M. I. Jacobs, **C. M. Schroeder**\*, “3D Manipulation of Colloidal Particles and Droplets in 3D Flows using Automated Flow Control”, *Journal of Rheology*, 67, 877-890 (2023).
105. P. Banerjee, G. R. Burks, S. B. Bialik, M. Nassr, E. Bello, M. Alleyne, B. D. Freeman, J. E. Barrick, **C. M. Schroeder**, D. J. Milliron\*, “Nanostructure-derived Anti-reflectivity in Leafhopper Brochosomes”, *Advanced Photonics Research*, 2200343 (2023).
104. M. Pence, O. Rodríguez, N. Lukhanin, **C. M. Schroeder**, J. Rodríguez-López\*, “Automated Measurement of Electrogenerated Redox Species Degradation Using Multiplexed Interdigitated Electrode Arrays”, *ACS Measurement Science Au*, 3, 62-72 (2023).
103. G. R. Burks, L. Yao, F. Kalutanirige, K. Gray, E. Bello, S. Rajagopalan, S. Bialik, J. Barrick, M. Alleyne, Q. Chen, **C. M. Schroeder**\*, “Electron Tomography and Machine Learning for Understanding the Highly Ordered Structure of Leafhopper Brochosomes”, *Biomacromolecules*, 24, 190-200 (2023).
102. H. Yu, F. Kalutanirige, L. Yao, **C. M. Schroeder**\*, Q. Chen\*, J. S. Moore\*, “Self-Assembly of Repetitive Segment and Random Segment Polymer Architectures”, *ACS Macro Letters*, 11, 1366-1372 (2022).

101. N. H. Angello, V. Rathore, W. Beker, A. Wolos, E. R. Jira, R. Roszak, T. C. Wu, **C. M. Schroeder**, A. Aspuru-Guzik, B. A. Grzybowski\*, M. D. Burke\*, "Closed-loop Optimization of General Reaction Conditions", *Science*, 378, 399-405 (2022).

This article received broad news coverage: C&E News, Phys Org, EurekAlerts, ScienMag, Nanotechnology Now, Bioengineer.org, Nanowerk.

100. M. I. Jacobs, P. Bansal, D. Shukla, **C. M. Schroeder**\*, "Understanding Supramolecular Assembly of Supercharged Proteins", *ACS Central Science*, 8, 1350-1361 (2022).

This article was featured on the back cover of *ACS Central Science*.

99. P. Singh, M. Pacholski, J. Gu, Y.-K. Go, G. Singhal, C. Leal, P. V. Braun, K. Patankar, R. Drumright, S. A. Rogers, **C. M. Schroeder**\*, "Designing Multicomponent Polymer Colloids for Self-stratifying Films", *Langmuir*, 38, 11160-11170 (2022).

98. P. Kafle, S. Huang, K. S. Park, F. Zhang, H. Yu, C. Kasprzak, H. Kim, **C. M. Schroeder**, A. van der Zande, Y. Diao\*, "Role of Interfacial Interactions in Graphene-Directed Assembly of Monolayer Conjugated Polymers", *Langmuir*, 38, 6984-6995 (2022).

97. H. Yu, J. Li, S. Li, Y. Liu, N. E. Jackson, J. S. Moore, **C. M. Schroeder**\*, "Efficient Intermolecular Charge Transport in pi-Stacked Pyridinium Dimers using Cucurbit[8]uril Supramolecular Complexes", *Journal of the American Chemical Society*, 144, 3162-3173 (2022).

96. C. Pan, S. K. Tabatabaei, S. M. H. Tabatabaei Yazdi, A. G. Hernandez, **C. M. Schroeder**\*, O. Milenkovic\*, "Rewritable Two-Dimensional DNA-Based Data Storage with Machine Learning Reconstruction", *Nature Communications*, 13, 2984 (2022).

95. S. Li, E. R. Jira, N. H. Angello, J. Li, H. Yu, J. S. Moore, Y. Diao, M. D. Burke, **C. M. Schroeder**\*, "Using Automated Synthesis to Understand the Role of Side Chains on Molecular Charge Transport", *Nature Communications*, 13, 2101 (2022).

94. S. K. Tabatabaei, B. Pham, C. Pan, J. Liu, S. Chandak, S. A. Shorkey, A. G. Hernandez, A. Aksimentiev, M. Chen, **C. M. Schroeder**\*, O. Milenkovic\*, "Expanding the Molecular Alphabet of DNA-Based Data Storage Systems with Neural Network Nanopore Readout Processing", *Nano Letters*, 22, 1905-1914 (2022).

This article was covered in CNET, Phys Org, EurekAlerts, Science Daily, Electronics Weekly, Nanotechnology Now, Tech Times, Tech Register, Bioengineer.org, Nanowerk.

93. D. Kong, S. Banik, M. J. San Francisco, M. Lee, R. M. Robertson-Anderson, **C. M. Schroeder**, G. B. McKenna\*, "Rheology of Entangled Solutions of Ring-linear DNA Blends", *Macromolecules*, 55, 1205-1217 (2022).

92. A. Khandelwal, N. Athreya, M. Tu, L. Janavicius, Z. Yang, O. Milenkovic, J.-P. Leburton, **C. M. Schroeder**, X. Li\*, "Self-Assembled Microtubular Electrodes for On-Chip Low-Voltage Electrophoretic Manipulation of Charged Particles and Macromolecules", *Microsystems & Nanoengineering*, 8, 22 (2022).

91. Y. Zhou, F. Latinwo, **C. M. Schroeder**\*, "Crooks Fluctuation Theorem for Single Polymer Dynamics in Time-dependent Flows: Understanding Viscoelastic Hysteresis", *Entropy*, 24, 27 (2022).

This article was invited as part of a special issue organized by Prof. Antony Beris.

90. M. I. Jacobs, E. R. Jira, **C. M. Schroeder**\*, "Understanding How Coacervates Drive Reversible Small Molecule Reactions to Promote Molecular Complexity", *Langmuir*, 37, 14323-14335 (2021).

89. D. Kumar and **C. M. Schroeder**\*, "Nonlinear Transient and Steady-state Stretching of Deflated Vesicles in Flow", *Langmuir*, 37, 13976-13984 (2021).

88. J. Li, S. Pudar, H. Yu, S. Li, J. S. Moore, J. Rodríguez-López, N. E. Jackson, **C. M. Schroeder\***, “Reversible Switching of Molecular Conductance in Viologens is Controlled by the Electrochemical Environment”, *Journal of Physical Chemistry C*, 125, 21862-21872 (2021).
87. S. Li, H. Yu, J. Li, N. Angello, E. R. Jira, B. Li, M. D. Burke, J. S. Moore, **C. M. Schroeder\***, “Transition between Non-resonant and Resonant Charge Transport in Molecular Junctions”, *Nano Letters*, 21, 8340-8347 (2021).
86. C. Lin, D. Kumar, C. Richter, S. Wang, **C. M. Schroeder\***, V. Narsimhan\*, “Vesicle Dynamics in Large Amplitude Oscillatory Extensional Flow”, *Journal of Fluid Mechanics*, 929 (2021).
85. Y. Zhou, C. D. Young, K. E. Regan, M. Lee, S. Banik, D. Kong, G. B. McKenna, R. M. Robertson-Anderson, C. E. Sing, **C. M. Schroeder\***, “Dynamics and Rheology of Ring-Linear Blend Semidilute Solutions in Extensional Flow: Single Molecule Experiments”, *Journal of Rheology*, 65, 729-744 (2021).
84. C. D. Young, Y. Zhou, **C. M. Schroeder**, C. E. Sing\*, “Dynamics and Rheology of Ring-Linear Blend Semidilute Solutions in Extensional Flow: Modeling and Molecular Simulations”, *Journal of Rheology*, 65, 757-777 (2021).
83. S. Jain, S. Shukla, C. Yang, Y. Wang, X. Xiong, S. Abesteh, M. Lingamaneni, **C. M. Schroeder**, P. R. Selvin, H. Zhao\*, “TALEN Outperforms Cas9 in Editing Heterochromatin Target Sites”, *Nature Communications*, 12, 606 (2021).
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”, *Physical Review Fluids*, 5, 121301R (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*, 53, 9406-9419 (2020).
80. D. J. 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*, 85, 114070 (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).

This article was featured on the back 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  $\pi$ -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\***, “Effect of Molecular Architecture on Ring Polymer Dynamics in Semidilute 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).

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).

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  $\pi$ -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  $\pi$ -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  $\pi$ -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).

This article appeared 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).

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, **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).

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  $\pi$ -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).

This article 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).

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 Flavon-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).

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).

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  $\beta$ -1,4-Mannosidic and  $\beta$ -1,4-Glucosidic Cleavage Activities from *Caldanaerobius polysaccharolyticus*”, *Journal of Bacteriology*, 192, 4111-4121 (2010).
9. M. Tanyeri, E. M. Johnson-Chavarria, **C. M. Schroeder\***, “Hydrodynamic Trap for Single Particles and Cells”, *Applied Physics Letters*, 96, 224101 (2010).

This article was highlighted in several news outlets.

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).

## PATENTS

1. 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, 18/355,107, Awarded 2026.
2. O. Milenkovic, C. M. Schroeder, H. Tabatabaei, K. Tabatabaei, A. Hernandez, C. Pan, “DNA Based Image Storage and Retrieval”, United States Non-Provisional Patent, UIUC2019-195-02(US), 17/102,143, Awarded 2023.
3. 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.
4. 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 2006.

## BOOK CHAPTERS

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.

## 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.

## INVITED LECTURES

119. C. M. Schroeder, ““Lipid Bilayers as Soft Dielectrics and Heme-binding Peptides as Conductors”, Princeton Materials Institute Annual Symposium, Princeton University, April 2026.
118. C. M. Schroeder, “Direct Observation of Polymer Chain Tumbling in Entangled Solutions Under Shear Flow”, Dillon Award Symposium, DPOLY, American Physical Society, Denver, CO, March 2026.
117. C. M. Schroeder, “Lipid Bilayers as Soft Dielectrics and Heme-binding Peptides as Conductors”, DSOFTE Frontier of Soft Matter Physics from DSOFTE Fellows, American Physical Society, Denver, CO, March 2026.
116. C. M. Schroeder, “Dynamics of Multicomponent Lipid Vesicles in Shear Flow”, Invited Talk, Symposium in Memory of Andreas Acrivos, American Physical Society, Division of Fluid Dynamics, Houston, TX, November 2025.
115. C. M. Schroeder, “Dynamics and Stability of Liquid-Bound Particle Clusters in Flow”, Invited Talk, Symposium in Memory of Andreas Acrivos, American Institute of Chemical Engineers Annual Meeting 2025, Boston, MA, November 2025.
114. C. M. Schroeder, “Amino Acid Sequence Controls Electron Transport in Peptides and Heme-binding Peptide Monolayers”, Invited Talk, Biopolymers Session, American Institute of Chemical Engineers Annual Meeting 2025, Boston, MA, November 2025.
113. C. M. Schroeder, “Non-equilibrium Dynamics of Lipid Vesicles via Automated Flow Control”, Department of Chemical and Biomolecular Engineering, Lehigh University, October 2025.
112. C. M. Schroeder, “AI-Guided Closed-loop Discovery of Photostable Light-harvesting Molecules”, Department of Chemical and Sustainability Engineering, University of Rochester, October 2025.
111. C. M. Schroeder, “Non-equilibrium Dynamics of Lipid Vesicles via Automated Flow Control”, Department of Chemical and Biomolecular Engineering, University of Pennsylvania, September 2025.
110. C. M. Schroeder (co-speaker), “Grants and Proposal Writing”, 2025 Future Faculty Workshop, University of California-Irvine, July 2025.
109. C. M. Schroeder, “Electron Transport in Peptides and Heme-binding Peptide Materials”, Telluride Science Workshop on Molecular Engineering of Soft Matter: Spanning Small Molecules to Macromolecules”, Telluride, CO, May 2025.
108. C. M. Schroeder, “Electron Transport in Peptides, Heme-binding Proteins, and Lipid Bilayers”, Department of Chemistry, UC Riverside, Riverside, CA, April 2025.
107. C. M. Schroeder, “AI-Guided Closed-loop Discovery of Photostable Light-harvesting Molecules”, UIUC ACS POLY/PMSE Section, April 2025.
106. C. M. Schroeder, “Open Macromolecular Genome (OMG): Functional Monomer Design for Synthetically Accessible Polymers”, 2025 ACS Spring Meeting, San Diego, CA, March 2025.
105. C. M. Schroeder, “Electron Transport in Peptides and Heme-binding Peptide Materials”, Peptide Materials Gordon Research Conference (GRC), Pomona, CA, January 2025.

104. C. M. Schroeder (organizer), "The GRC Power Hour", Peptide Materials Gordon Research Conference (GRC), Pomona, CA, January 2025.
103. C. M. Schroeder, "AI-Guided Closed-loop Discovery of Photostable Light-harvesting Molecules", BP-International Centre for Advanced Materials (BP-ICAM), June 13, 2024.
102. C. M. Schroeder, "Ladder-type Molecules as Robust and Switchable Molecular Electronic Devices", 2024 ACS Spring Meeting, New Orleans, LA, April 2024.
101. C. M. Schroeder, "Automated Synthesis for Closed-Loop Discovery of Organic Light-Harvesting Molecules", 2024 ACS Spring Meeting, New Orleans, LA, April 2024.
100. C. M. Schroeder, "Electron Transport in Self-Assembled Peptides and Metalloproteins", Dillon Medal Award Session (DPOLY), 2024 March APS Meeting, Minneapolis, MN, March 2024.
99. C. M. Schroeder, "Closed-loop Discovery of Photostable Light-harvesting Molecules", Department of Macromolecular Science & Engineering, Case Western University, February 2024.
98. C. M. Schroeder, "Understanding Lipid Vesicle Dynamics using a Stokes Trap", Department of Physics, University of Illinois at Urbana-Champaign, January 2024.
97. C. M. Schroeder, "Closed-loop Discovery of Photostable Light-harvesting Molecules", Department of Chemical and Biological Engineering, Princeton University, January 2024.
96. C. M. Schroeder, "Self-assembled Bioelectronics and Data-driven Discovery of Bioelectronic Materials", Army Center for Synthetic Biology (Predictive Design of Materials, PreMaDe), Austin, TX, January 2024.
95. C. M. Schroeder, "Closed-loop Discovery of Photostable Light-harvesting Molecules", Area 8A Plenary, American Institute of Chemical Engineers Annual Meeting, Orlando FL, November 2023.
94. C. M. Schroeder (speaker) and M. Q. Tu, "Unexpected Slow Relaxation Dynamics of Pure Ring Polymers", CECAM Workshop on Ring Polymers, Prato, Italy, June 2023.
93. C. M. Schroeder, "Unexpected Slow Relaxation of Pure High MW Ring Polymers", Institute for Non-Newtonian Fluid Mechanics (INNFM), British Society of Rheology, Lake Vyrnwy, Wales, UK, April 2023.
92. C. M. Schroeder, "Single Polymer Dynamics in 3D Flows", Dillon Medal Award Session (DPOLY), 2023 March APS Meeting, Las Vegas, NV, March 2023.
91. C. M. Schroeder, "Non-equilibrium Dynamics of Ring Polymers using Single Molecule Techniques", 2023 March APS Meeting, Las Vegas, NV, March 2023.
90. C. M. Schroeder, "Non-equilibrium Dynamics of Lipid Vesicles in Precisely Controlled Flows", Department of Chemical & Biological Engineering, Northwestern University, March 2023.
89. C. M. Schroeder, "Single Polymer Dynamics for Molecular Rheology: Unexpected Behavior of Rings", Department of Chemical & Biomolecular Engineering, University of Delaware, December 2022.
88. C. M. Schroeder, "Dynamics of Vesicles and Membranes in Non-equilibrium Flows using a Stokes Trap", Department of Materials Science and Engineering, Drexel University, September 2022.
87. C. M. Schroeder, "Dynamics of Ring Polymers in Dilute and Concentrated Solutions", Plenary Talk, International Symposium on Applied Rheology, May 2022.
86. C. M. Schroeder, Oliver Martinez-Rodriguez, Joaquin Rodriguez-Lopez, Michael Pence, Hung Nguyen, Edward Jira, Inkyu Oh, "The ElectroLab: an integrated platform for high-throughput characterization of redox-active materials", Invited Talk, Materials Research Society, May 2022.
85. C. M. Schroeder, "Single Polymer Dynamics for Molecular Rheology: Dynamics of Rings in Dilute and Concentrated Solutions", Chemical, Materials, and Biological Engineering, University of Oklahoma, April 2022.

84. C. M. Schroeder, "Molecular Electronics: Understanding Charge Transport in Sequence-defined Materials using Automated Chemical Synthesis", Department of Chemical Engineering, University of California-Irvine, October 2021.
83. C. M. Schroeder, "Non-equilibrium Dynamics of Vesicles in Flow using a Stokes Trap", Keynote Talk, Society of Rheology Annual Meeting, October 2021.
82. C. M. Schroeder, "Molecular Electronics: Understanding Charge Transport in Sequence-defined Materials using Automated Chemical Synthesis", Department of Chemical Engineering, Penn State University, September 2021.
81. C. M. Schroeder (speaker), Olga Milenkovic, "Expanding the Molecular Alphabet of DNA Data Storage Systems with Nanopore Readouts", NSF SemiSynbio Virtual Workshop, August 2021.
80. C. M. Schroeder, "Understanding Charge Transport at Electrode Interfaces using Single Molecule Techniques", Materials Research Society (MRS Spring Meeting), April 2021.
79. C. M. Schroeder, "Single Polymer Dynamics for Molecular Rheology: Rings, Branches, and Entanglements", School of Polymer Science and Engineering, University of Akron, Akron, OH, February 2021.
78. C. M. Schroeder, "Automated Flow Control for Colloidal and Molecular Rheology", Keynote Lecture, British Society of Rheology, Mid-Winter Meeting, January 2021.
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. (Virtual)
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  $\pi$ -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.

## EDITORIAL BOARDS

1. Guest Editor, *Journal of Rheology*, 2019-2023.
2. Editorial Board, *Journal of Rheology*, 2022-present.
3. Editorial Board, *Scientific Reports*, 2019-present.
4. Guest Editor, *Lab on a Chip*, 2016.

## 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 (DSOFT, DPOLY)
6. Materials Research Society (MRS)
7. American Chemical Society

#### LEADERSHIP AND SERVICE TO PROFESSIONAL SOCIETIES

1. Organizer, Future Faculty Workshop in Soft Materials; Florida State University, 2026
2. Chair, APS DPOLY Programming, 2026-2027
3. Vice-Chair, APS DPOLY Programming, 2025-2026
4. Executive Committee, Society of Rheology, 2026-
5. Advisory Board, Soft Matter Association of the Americas (SMAA), 2023-present
6. APS DPOLY Programming Committee, 2023-present
7. Chair, Metzner Award Committee, Society of Rheology, 2025
8. Metzner Award Committee, Society of Rheology, 2022-2025
9. Meeting Co-Organizer, CECAM Workshop on Ring Polymers, Prato, Italy, June 2023
10. Technical Co-Chair (overall meeting), 2022 Annual Meeting of the Society of Rheology, Chicago, IL, October 2022
11. Faculty Mentor, Future Faculty Workshop in Soft Materials; University of Delaware 2018, Princeton 2019, University of Delaware 2022, UC Irvine 2025
12. Area Chair, Area 1J (Fluid Dynamics), American Institute of Chemical Engineers, 2018-2020
13. Organizer, Shaqfeh Symposium, Stanford University, August 2019
14. Area Co-Chair, Area 1J (Fluid Dynamics), American Institute of Chemical Engineers, 2016-2018
15. Floor Planning Committee, Area 1J, American Institute of Chemical Engineers, 2012-2022
16. Meeting Programming Chair (MPC), Area 1J, American Institute of Chemical Engineers, AIChE Annual Meeting 2014
17. Membership Committee, Society of Rheology, 2013-2020

#### UNIVERSITY LEADERSHIP AND SERVICE (PRINCETON UNIVERSITY)

1. Director of Graduate Studies, Department Chemical and Biological Engineering, Princeton University
2. Graduate Committee, Department Chemical and Biological Engineering, Princeton University

#### UNIVERSITY LEADERSHIP AND SERVICE (UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN)

1. Teaching Evaluation Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2023-2025
2. Interim Associate Head, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2024
3. Chair, Awards Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2023-2024

4. Co-Chair, Molecular Science and Engineering (MSE) Theme, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, 2018-2024
5. Group Leader, AI for Materials (AIM) Group, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, 2022-2025
6. Awards Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign
7. Advising Committee, Undergraduates, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2025
8. Executive Committee, Beckman Institute, University of Illinois at Urbana-Champaign, 2017-2024
9. Faculty Development Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2021-2023
10. Faculty Search Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2022-2023
11. Chair, Faculty Advisory Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2022-2023
12. Chair, Faculty Search Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2021-2022
13. Group Leader, Molecular Design and Engineering (MDE) Group, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, 2018-2022
14. Chair, Soft Materials Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2020-2022
15. Curriculum Committee, Department of Materials Science & Engineering, University of Illinois at Urbana-Champaign, 2020-2021
16. Associate Head, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2020
17. Associate Vice Chair, College of Engineering Executive Committee, University of Illinois at Urbana-Champaign, 2019
18. Reporting Officer, College of Engineering, University of Illinois at Urbana-Champaign, 2019
19. Executive Committee, College of Engineering, University of Illinois at Urbana-Champaign, 2018-2020
20. Awards Committee, College of Engineering, University of Illinois at Urbana-Champaign, 2017-2019
21. Faculty Advisory Committee, Roy J. Carver Biotechnology Center, University of Illinois at Urbana-Champaign, 2015-2019
22. Executive Committee, Center for Biophysics and Quantitative Biology, University of Illinois at Urbana-Champaign, 2015-2018
23. Engineering Faculty Leadership Forum, College of Engineering, University of Illinois at Urbana-Champaign, 2017-2018
24. Director of Graduate Admissions, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2014-2016
25. Graduate Affairs & Recruiting Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2016
26. Department Head Review Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2015-2016

27. Chair, Biophysics Qualifying Exam Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign, 2014-2015; 2018-2019
28. Chair, Faculty Recruiting Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Spring 2014
29. Chancellor and Provost Committee on LGBTQ Concerns Committee, University of Illinois at Urbana-Champaign, 2014-2015, 2017-2018
30. Fellowship Coordinator, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2013
31. Safety Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2013
32. SURGE/MERGE Advisory Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2008-2013
33. Biophysics Qualifying Exam Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign, 2010-2012
34. Biophysics Courses & Curriculum Committee, Center for Biophysics and Computational Biology, University of Illinois at Urbana-Champaign, 2012-2013
35. Department Head Search Committee, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, 2010-2011
36. Organizing Committee, Annual Workshop, Center for Nanoscale Science and Technology, University of Illinois at Urbana-Champaign, 2010

#### PROFESSIONAL SERVICE (SESSION CHAIRS)

1. Session Chair, ISMC Meeting (8th Annual International Soft Matter Conference), Raleigh, NC, July-August 2024.
2. Session Chair, International Congress on Rheology (ICR), Rio de Janeiro, Brazil, December 2020. (Virtual).
3. Session Chair, "Microrheology and Microfluidics", Society of Rheology Annual Meeting, Denver, CO, October 2017.
4. Session Chair, "Biosensors, Bionanotechnology, and Bioelectronics", International Conference on Biomolecular Engineering, San Diego, CA, January 2017.
5. 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.
6. Session Chair, "Micro and Nanofluidics", Society of Rheology Annual Meeting, Baltimore, MD, October 2015.
7. Discussion Leader, Gordon Research Conference on Macromolecular Materials, Ventura, CA, January 2015.
8. Session co-Chair, "Bio-Fluid Dynamics", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2013.
9. Session Chair, "Rheology in Biological Systems", Society of Rheology Annual Meeting, Pasadena, CA, February 2013.
10. Poster Session Judge, Student/Postdoc Poster Session, American Institute of Chemical Engineers (Area 1J), Pittsburgh, PA, October 2012.

11. Session Chair, “Bio-Fluid Dynamics”, American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
12. Session Chair, “Bio-Fluid Dynamics”, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.
13. Session Chair, “Non-Newtonian Flows and Nonlinear Hydrodynamics”, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
14. Session Judge, Student/Postdoc Poster Session, Society of Rheology Annual Meeting, Santa Fe, NM, October 2010.
15. Discussion Leader, Gordon Research Conference on Colloids, Macromolecules and Polyelectrolytes, Ventura, CA, February 2010.
16. Session Chair, “Complex and Bio-Fluid Dynamics II”, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
17. Session Co-Chair, “Complex and Bio-Fluid Dynamics I”, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
18. Session Chair, “Energy & Sustainability”, American Institute of Chemical Engineers Chicago Meeting, Chicago, IL, October 2009.

## 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, Spring 2025
4. Reviewer, Graduate Women in Science Fellowships, 2011
5. Reviewer, ACS Petroleum Research Fund, 2014, 2016, 2020, 2023, 2025
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, 2022
11. Reviewer, Arnold O. Beckman Postdoctoral Fellowship, Arnold and Mabel Beckman Foundation, 2023
12. Reviewer, Moore Foundation, 2025

## PEER REVIEW

Several journals including 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

### Princeton University

1. Instructor, *Mass, Momentum, and Energy Transport*, CBE 341, Princeton University. Fall 2026.
2. Instructor, *Research Topics in Chemical and Biological Engineering*, CBE 507 Princeton University. Fall 2026.
3. Instructor, *Mathematics in Engineering I*, MAE 305 / MAT 391 / EGR 305 / CBE 305, Princeton University. Spring 2026.

### University of Illinois Urbana-Champaign

2. Instructor, *Macromolecular Solids*, Course 455, Department of Materials Science & Engineering, University of Illinois. Spring 2021, Spring 2022, Spring 2023, Spring 2025.
3. Co-organizer, *Soft Materials Seminar*, Department of Materials Science & Engineering, University of Illinois. Fall 2020, Spring 2021, Fall 2021, Spring 2022.
4. Instructor, *Microhydrodynamics of Soft Materials*, Course 598X, Department of Materials Science & Engineering, University of Illinois. Fall 2021, Fall 2023.
5. Instructor, *Dynamics of Complex Liquids*, Course 594cms, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2018.
6. Instructor, *Fluid Dynamics*, Course 522, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2014, Spring 2015, Spring 2019, Spring 2020.
7. 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, Fall 2022
8. 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.
9. Instructor, *Bioenergy & Biofuels Technology*, Course 494/594CMS, Department of Chemical & Biomolecular Engineering, University of Illinois. Spring 2010, Spring 2011.
10. Teaching Assistant, *Fluid Mechanics*, Course 120A, Department of Chemical Engineering, Stanford University. Winter 2001.
11. 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.

## PH.D. STUDENTS SUPERVISED (CHRONOLOGICAL ORDER)

### University of Illinois Urbana-Champaign

1. Christopher Brockman, Ph.D, ChBE, 2013, “Single Molecule Studies of Flexible Polymer Systems”. Current position: Research Engineer, Intel, 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: Associate 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”. Current position: Research Engineer, Synopsys. Prior: Postdoctoral Fellow, Princeton University (Debenedetti Group).
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, Intel, 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 Engineer, AbbVie.
8. Luke Cuculis, Ph.D., Chemistry, 2016, “Single Molecule Investigation of Transcription Activator-like Effector Search Dynamics”. Current position: Director, Strategy, The Hershey Company. Past 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: Assistant Professor, Department of Materials Science and Engineering, Texas A&M. Past positions: Postdoc, DeSimone Group, Stanford University; 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: Senior Software Engineer, Google. Past position: Research Engineer at Intel, Portland, OR.
12. Yuecheng (Peter) Zhou, Ph.D., MatSE, 2019, “Single Molecule Studies of Polymers and Self-Assembling Materials: Effects of Chain Topology and Entanglements”. Assistant Professor in the Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign. Past position: Postdoctoral Fellow, Stanford University (Cui Group, Chemistry).
13. Songsong Li, Ph.D., MatSE, 2020, “Single Molecule Studies of Molecular Electronics and Biohybrid Materials”, Current position: Postdoctoral Researcher, University of Chicago. Starting as Assistant Professor, Department of Physics, Hong Kong Baptist University, March 2025.
14. Shivani Patel, Ph.D., ChBE, 2020, “Single Molecule Studies of Branched Polymer Dynamics in Non-Dilute Solutions”, Current position: Research Engineer, Intel, Portland OR.
15. Dinesh Kumar, Ph.D., ChBE, 2021, “Shape Dynamics of Anisotropic Lipid Vesicles using Automated Flow Control”, Current position: Research Engineer at Dow.
16. Hao Yu, Ph.D., ChBE (co-advised with Jeff Moore), 2021 “Investigation of Sequence-Property Correlations in Precisely Defined Synthetic Macromolecules”, Current position: Postdoctoral Fellow, University of California-Berkeley (Ting Xu).
17. Michael Tu, Ph.D., ChBE, 2022, “Ring Polymer Dynamics in Dilute and Concentrated Solutions with Advances in Automated Flow Control”, Current position: Research Engineer, Intel, Portland OR.

18. Kasra Tabatabaei, Ph.D., Biophysics, 2022, "Next-Generation DNA-Based Data Recorders". Current position: Research Scientist at New England Biolabs, Ipswich, MA.
19. Edward Jira, ChBE, 2022, "Automated Chemical Synthesis for Accelerated Discovery of Organic Electronic Materials". Current position: Research Scientist, Dow Chemical, Midland, MI.
20. Caroline Li, ChBE, 2023, "Single Molecule Studies of Charge Transport in Organic Redox-Active Materials". Current position: Research Scientist, 3M, Minneapolis, MN.
21. Jonathan Deutsch, Ph.D., Biophysics, 2024, "Single-molecule Dynamics of GPCR Signal Transducers". Current position: Postdoc, Stanford University.
22. Seungjoo Yi, Ph.D., MatSE, 2025, "Automated Small Molecule Synthesis for Accelerated Discovery of Photo- and Electroactive Organic Materials". Current position: Postdoc, University of Illinois at Urbana-Champaign (Burke).
23. Seongon Jang, Ph.D., MatSE, 2025, "Tunable Viscoelasticity, Morphology, and Charge Transport of Dynamic Covalent Polymers" (co-advised with Chris Evans). Current position: Postdoc, University of Pennsylvania (Composto).
24. Brittany Prempin, Ph.D., Chemistry (co-advised with Jeff Moore), 2025, "Secondary Structure Effects on Molecular Conductance of Peptoid Oligomers". Current position: Postdoc Research Associate, Institute for Genomic Biology, University of Illinois at Urbana-Champaign.
25. Hao (Alvin) Yang, Ph.D., MatSE 2025, "Electronic Properties of Single Molecules and Self-Assembled Monolayers for Molecular Electronics". Current position: Research Scientist, Apple China.
26. Rajarshi (Reeju) Samajdar, Ph.D., ChBE 2026, "Nanoscale Electron Transport in Biomolecules and Synthetic Organic Molecules". Current position: Postdoc, Stanford University.
27. Hung Nguyen, Ph.D., MatSE 2026, "Single-molecule Dynamics of Entangled Polymers in Shear Flow with Advances in Automated Flow Control".
28. Sagar Chaudhary, Ph.D. MechSE 2026, "Dynamics of Liquid-Bound Particle Clusters in Extensional Flow". Current position: Product Engineer, Lam Research.
29. Seonghwan Kim, Ph.D. MatSE 2026 (co-advised with Nick Jackson), "Computational Design of Polymer Chemistry". Current position: Postdoc, NYU (Juan de Pablo).
30. Tiara Torres-Flores, ChBE (co-advised with Ying Diao)

#### **Princeton University**

31. Eden (Yiding) Li, MSE
32. Jason Wu, Chemistry
33. Sangwon Kim, MSE
34. Madison McCarthy, CBE
35. Zaw Htet Lin, CBE
36. Noah Zahn, CBE

#### **M.S. STUDENTS SUPERVISED**

1. Abiodun Oki, M.S., ChBE, University of Illinois Urbana-Champaign, 2014.
2. Sun Ju Kim, M.S., ChBE, University of Illinois Urbana-Champaign, 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, University of Illinois Urbana-Champaign, 2011, "Tuning DNA Binding and Gene Expression using Zinc Finger Proteins and Engineered Promoters". Current position: Assistant Director, STEM Education, University of Rochester.
4. Jin Yu, M.S., MatSE, University of Illinois Urbana-Champaign, 2018.
5. Wei Ge, M.S. (3+2 Tsinghua Univ.), University of Illinois Urbana-Champaign, 2017-19

## POSTDOCTORAL FELLOWS & RESEARCH ASSOCIATES SUPERVISED

1. Dr. Melikhan Tanyeri, Ph.D. University of California-Davis, 9/2008-7/2013. Current position: Associate Professor, Duquesne University, Department of Biomedical Engineering.
2. Dr. Younghoon Kim, Ph.D. University of Pennsylvania, 1/2009-6/2012. Current position: Staff Scientist, Genzyme.
3. Dr. Kejia Chen, Ph.D. University of Illinois at Urbana-Champaign, 10/2015-2/2017. Current position: Research Engineer at Google.
4. Dr. Subhalakshmi Kumar, Ph.D. University of Illinois at Urbana-Champaign, 11/2014-10/2017. Current position: Senior Research Engineer at Inprentus.
5. Dr. Bo Li, Ph.D. Georgia Tech, 7/2015-8/2020. Current position: Associate Professor, Kennesaw State University.
6. Dr. Piyush Singh, Ph.D. University of Illinois at Urbana-Champaign, 5/2019-6/2022. Current position: Research Scientist, Dow Chemical, TX.
7. Dr. Michael Jacobs, Ph.D. University of California, Berkeley, 6/2019-7/2022. Current position: Assistant Professor, Department of Chemistry, Texas State University.
8. Dr. Saadia Chaudhry, Ph.D. Purdue University, 8/2021-4/2022. Current position: Eagleton Science and Policy Fellow, Rutgers University.
9. Dr. Gabriel Burks, Ph.D. Drexel University, 9/2020-2/2023. Current position: Assistant Professor, Department of Chemical and Biomolecular Engineering, University of Notre Dame.
10. Dr. Inkyu Oh, Ph.D. University of Illinois at Urbana-Champaign, 8/2021-8/2023. Current position: Research Engineer, Caterpillar.
11. Dr. Xiaolin Liu, Ph.D. The Hong Kong University of Science and Technology, 9/2025-present.
12. Dr. Babak Hokmabad, Ph.D. Max Planck Institute for Dynamics and Self-Organization and University of Goettingen, Germany, 9/2025-present.

## UNDERGRADUATE STUDENTS SUPERVISED

### University of Illinois Urbana-Champaign

1. Mikhil 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 Rudolph, ChBE, Summer 2018-Spring 2020, Research Project
26. Aaron Merlin, ChBE, Summer 2018-2020, Research Project
27. Noah Hopkins, ChBE, Fall 2018-2020, Research Project
28. Luke (Shuai) Yu, ChBE/Physics, Spring 2019-2021, Research Project
29. Eddie Kosinsky, ChBE, 2019-2021, Research Project
30. Kyle Gray, ChBE, 2021-2023, Research Project
31. Nikita Lukhanin, MechSE, 2021-2023, Research Project
32. Neil Moghe, ChBE, 2023-2025, Research Project
33. Timothy Njuguna, Physics, 2023-2025, Research Project
34. Baker (Yu) Shi, Chemistry, 2024-2025, Research Project
35. Allison Lau, ChBE, 2023-2026, Research Project

### **Princeton University**

1. Conor West, CBE
2. Claire DeGuzman, CBE (Senior Thesis)
3. Colin Bausley, CBE (Senior Thesis)

### **CONTRIBUTED PRESENTATIONS**

*Available upon request (2001-present)*