

XIN YONG

Associate Professor

Department of Mechanical and Aerospace Engineering

University at Buffalo

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Email: xinyong@buffalo.edu**EDUCATION**

Ph.D. in Mechanical Engineering	05/2008-05/2012
<i>Rensselaer Polytechnic Institute, Troy, NY</i>	
B.S. in Physics with Double Major in Economics	09/2003-07/2007
<i>Peking University, Beijing, China</i>	

PROFESSIONAL EXPERIENCE

Associate Professor	08/2024-present
<i>Department of Mechanical Engineering University at Buffalo, Buffalo, NY</i>	
Visiting Professor	08/2024-present
<i>Department of Mechanical Engineering Binghamton University, Binghamton, NY</i>	
Associate Professor	08/2020-08/2024
<i>Department of Mechanical Engineering Binghamton University, Binghamton, NY</i>	
Assistant Professor	08/2014-08/2020
<i>Department of Mechanical Engineering Binghamton University, Binghamton, NY</i>	
Affiliated Faculty	04/2015-08/2024
<i>Materials Science and Engineering Program Binghamton University, Binghamton, NY</i>	
Postdoctoral Associate	06/2012-07/2014
<i>Department of Chemical and Petroleum Engineering University of Pittsburgh, Pittsburgh, PA</i>	
Graduate Research Assistant	05/2008-05/2012
<i>Rensselaer Polytechnic Institute Department of Mechanical, Aerospace, and Nuclear Engineering</i>	
Undergraduate Research Assistant	05/2006-12/2007

Peking University, Beijing, China
School of Physics

CURRENT RESEARCH INTERESTS

- Colloidal assembly and transport at fluid and biological interfaces
- Electrospray deposition of nanostructured polymeric materials and polymer nanocomposites
- Membrane shape remodeling in biological processes and biomanufacturing
- Machine-learning and data-driven modeling of biological locomotion and active matter

HONORS AND AWARDS

Watson School Early Stage Distinguished Research Award, Binghamton University	05/2020
Doctoral New Investigator Award, ACS Petroleum Research Fund	09/2016
NYS/UUP Individual Development Award, Binghamton University	01/2016, 02/2017
Travel Award, 62nd Annual Meeting of the APS DFD	11/2009
Travel Award, NSF CMMI Research and Innovation Conference 2009	03/2009
Excellent Bachelor Thesis, Peking University	07/2007

GRANTS AND RESEARCH SUPPORT

Summary of Research Funding

Funding category	Total	Yong's share
External sources	\$3,139,294	\$1,389,969
Internal sources	\$2,500	\$2,500
Total funded research	\$3,141,794	\$1,392,469

Current and Past Funding

- G8. Collaborative Research: Experiments and Modeling of the Fluid Flow of Beating Eukaryotic Flagella, Role: PI, Collaborative PI: Xiang Cheng, 08/01/2023-07/31/2026, National Science Foundation, \$679,472 (44% share).
- G7. Collaborative Research: Understanding "wild-type" nanoplastic uptake in single microalgae cells with fluorescence tracking and computational modeling, Role: PI, Collaborative PI: Ke Du (UC Riverside), 09/01/2021-08/31/2025, National Science Foundation, \$531,802 (50% share).
- G6. Capillary-Assisted Printing of Structural Colloidal Monolayers, Role: PI, Co-PIs: Paul R. Chiarot (SUNY Binghamton), Pong-yu Huang (SUNY Binghamton), 06/01/2020-05/31/2024, National Science Foundation, \$570,000 (35% share).
- G5. Small-molecule membrane interactions as a driver of bacterial outer membrane vesicle biogenesis across species, Role: Co-I, PI: Jeffrey W. Schertzer (SUNY Binghamton), 06/01/2020-05/31/2024, National Institute of General Medical Sciences, \$448,200 (50% share).

- G4. Convection-Assisted Assembly of Non-Iridescent Photonic Glasses, Role: PI, 05/01/2017-04/31/2018, Binghamton University Small Scale Systems Integration and Packaging (S3IP) Center of Excellence, \$2,500 (100% share).
- G3. Mesoscale Modeling of Stimuli-Responsive Composite Colloids at Oil-Water Interfaces, Role: PI, 09/01/2016-08/31/2020, American Chemical Society Petroleum Research Fund, \$110,000 (no overhead) (100% share).
- G2. Evaluating the Bilayer-Couple Model of Outer Membrane Vesicle Biogenesis Using Novel Asymmetric Membrane Templates, Role: Co-I, PI: Jeffrey W. Schertzer (SUNY Binghamton), other Co-I: Paul R. Chiarot (SUNY Binghamton), 01/01/2016-12/31/2018, National Institute of Allergy and Infectious Diseases, \$399,850 (33% share).
- G1. Inkjet-Electrospray Hybrid Printing: Understanding the Processing-Structure Relationship, Role: PI, Co-PIs: Paul R. Chiarot (SUNY Binghamton), Timothy J. Singler (SUNY Binghamton), 09/01/2015-08/31/2019, National Science Foundation, \$399,970 (40% share).

Pending Funding

- P5. Artificial Intelligence-Guided Electrospray Deposition of Polymeric Films, Role: Co-PI, PI: Paul R. Chiarot (SUNY Binghamton), other Co-PIs: Yu Jin, Daehan Won (SUNY Binghamton), 01/01/2025-12/31/2027, National Science Foundation, \$517,969 (24% share) (considered for award).
- P4. Collaborative Research: Self-Limiting Electrospray Deposition of Nanowire-Particle Composites for Advanced Coatings, Role: PI, Collaborative PI: Jonathan P. Singer (Rutgers), 10/01/2024-09/30/2027, National Science Foundation, \$450,000, (50% share) (considered for award).
- P3. Collaborative Research: Bioinspired Engineering of Outer Membrane Vesicles as Antifouling Agents, Role: PI, Collaborative PI: Paul R. Chiarot (SUNY Binghamton), 06/01/2025-05/31/2028, National Science Foundation, \$679,472 (44% share).
- P2. Elucidating Lipopolysaccharide Mechanics in Bacterial Outer Membranes Through Molecular Simulations, Role: PI, 04/01/2025-03/31/2027, National Institute of Allergy and Infectious Diseases, \$137,667 (100% share).
- P1. Experiments and Modeling of Cellular Interactions and Toxicity of Nanoplastics in Blood, Role: PI, Co-Is: Huiyuan Guo (SUNY Binghamton), Ke Du (UC Riverside), 01/01/2025-12/31/2026, National Institute of Environmental Health Sciences, \$421,149 (40% share).

User Proposals

- U6. Multiscale Modeling of Biomembrane Interaction with Signaling Molecules and Nanoplastics, Role: PI, 01/01/2024-12/31/2025, Brookhaven National Laboratory, Total Allocation Accumulated: 76K Core Hours.
- U5. Computational Modeling of Bacterial Outer Membranes and Interactions with Signaling Molecules, Role: PI, 07/01/2022-12/31/2023, NSF Extreme Science and Engineering Discovery Environment (XSEDE) Total Allocation: 158,000 Core-Hours, 22,500 GPU Hours (estimated value: \$33,776).
- U4. Modeling Controlled Membrane Deformation Induced by Small Molecules and Nanoparti-

cles, Role: PI, 01/01/2022-12/31/2023, Brookhaven National Laboratory, Total Allocation Accumulated: 1.2M Core Hours.

- U3. Active Filament Model of Bacterial Swarm Expansion, Role: PI, 01/01/2020-12/31/2021, Brookhaven National Laboratory, Total Allocation Accumulated: 1.2M Core Hours.
- U2. Small-molecule membrane interactions as a driver of bacterial outer membrane vesicle biogenesis across species, Role: PI, 04/01/2019-03/31/2020, NSF Extreme Science and Engineering Discovery Environment (XSEDE), Total Allocation: 1,600 Node Hours (estimated value: \$415).
- U1. Mesoscale Modeling of Stimuli-Responsive Pickering Emulsions, Role: PI, 01/01/2018-12/31/2019, Brookhaven National Laboratory, Total Allocation Accumulated: 2.1M Core Hours.

PUBLICATIONS

Google Scholar: <https://scholar.google.com/citations?user=lcVTSosAAAAJ&hl=en>

Citations 1,604 with *h*-index 26

ResearcherID: G-5828-2012

Citations 1,182 with *h*-index 20

ORCID: 0000-0002-8894-2750

Book Chapters

- B2. **X. Yong**, E. J Crabb, N. M. Moellers, I. Salib, G. T. McFarlin IV, O. Kuksenok, A. C. Balazs, Harnessing Self-healing Vesicles to Pick up and Drop off Janus Particles, in *Self-Assembly: From Surfactants to Nanoparticles*; R. Nagarajan, Ed.; Wiley: Hoboken, NJ, U.S.A., 2019.
- B1. **X. Yong**, S. C. Snow, O. Kuksenok, A. C. Balazs, Developing Hybrid Modeling Methods to Simulate Self-Assembly in Polymer Nanocomposites, in *Self-Assembling Systems: Theory and Simulation*; L. -T. Yan, Ed.; Wiley: West Sussex, U.K., 2016.

Journal Articles

(† graduate students and + undergraduate students in Yong's group; * denotes corresponding authors)

- J53. D. A. Redwan[†], K. Du, **X. Yong**^{*}, Probing wrapping dynamics of spherical nanoparticles by 3D vesicles using force-based simulations, *Soft Matter* **20**, 4548-4560 (2024) (featured as the front cover).
- J52. W. Dissanayake, R. Hailstone, L. Castillo, F. Nafar, M. Bao, R. Q. Wang, C. Gates, **X. Yong**, K. Du^{*}, The effects of CdSe/ZnS quantum dots on the photosynthesis rate of the *Chlorella Vulgaris* beads, *Algal Research* **72**, 103095 (2023).
- J51. **X. Yong**^{*}, K. Du, Effects of Shape on Interaction Dynamics of Tetrahedral Nanoplastics and the Cell Membrane, *J. Phys. Chem. B* **127**, 1652–1663 (2023) (featured as the supplementary cover).
- J50. E. Pirhadi[†], J. M. Vanegas, M. Farin⁺, J. W. Schertzer, **X. Yong**^{*}, Effect of local stress on accurate modeling of bacterial outer membranes using all-atom molecular dynamics, *J. Chem. Theory Comput.* **19**, 363–372 (2023).
- J49. J. M. Prisaznuk, P. Huang, **X. Yong**^{*}, P. R. Chiarot^{*}, Probing Colloidal Assembly on Non-

- Axisymmetric Droplet Surfaces via Electrospray, *Langmuir* **39**, 469–477 (2023).
- J48. J. M. Blisko[†], M. J. Grzenda, R. M. Vladimirovsky, C. E. Shuck, J. P. Singer*, **X. Yong***, Controlling morphology in electrosprayed methylcellulose nanowires via nanoparticle addition: coarse-grained modeling and experiments, *Nanoscale* **14**, 17985-17994 (2022).
- J47. Y. Li, M. Marander, R. Mort, F. Liu, **X. Yong***, S. Jiang*, Who wins the race near the interface? Stratification of colloids, nano-surfactants, and others, *J. Appl. Phys.* **132**, 110901 (2022).
- J46. S. Chen[†], E. Pirhadi[†], **X. Yong***, Viscoelastic Necking Dynamics between Collapsed Microgels, *J. Colloid Interface Sci.* **618**, 283-289 (2022).
- J45. E. Pirhadi[†], X. Cheng, **X. Yong***, Dependency of Active Pressure and Equation of State on Stiffness of Wall, *Sci. Rep.* **11**, 1-12 (2021).
- J44. E. Olson, F. Liu, J. Blisko, Y. Li, A. Tsyrenova, R. Mort, K. Vorst, G. Curtzwiler, X. Yong*, Shan Jiang*, Self-assembly in biobased nanocomposites for multifunctionality and improved performance, *Nanoscale Adv.* **3**, 4321-4348 (2021).
- J43. H. N. Dalgamoni[†], **X. Yong***, Numerical and theoretical modeling of droplet impact on spherical surfaces, *Phys. Fluids* **33**, 052112 (2021) (featured as Editor's Pick).
- J42. E. Olson, J. Blisko[†], C. Du, Y. Liu, Y. Li, H. Thurber, G. Curtzwiler, J. Ren, Martin Thuo, **X. Yong**, S. Jiang*, Biobased superhydrophobic coating enabled by nanoparticle assembly, *Nanoscale Adv.* **3**, 4037-4047 (2021) (featured as the front cover).
- J41. S. Chen[†], **X. Yong***, Elastocapillary interactions of thermoresponsive microgels across the volume phase transition temperatures, *J. Colloid Interface Sci.* **584**, 275-280 (2021).
- J40. L. Lei, S. Chen[†], C. J. Nachtigal, T. F. Moy⁺, **X. Yong**, J. P. Singer*, Homogeneous Gelation Leads to Nanowire Forests in the Transition Between Electrospray and Electrospinning, *Mater. Horiz.* **7**, 2643-2650 (2020) (featured as the back cover).
- J39. Y. Li, F. Liu, S. Chen[†], A. Tsyrenova, K. Miller, E. Olson, R. Mort, D. Palm, C. Xiang, **X. Yong**, S. Jiang*, Self-Stratification of Amphiphilic Janus Particles at Coating Surfaces, *Mater. Horiz.* **7**, 2047-2055 (2020) (featured as the front cover).
- J38. S. Chen[†], E. Olson, S. Jiang*, **X. Yong*** Nanoparticle assembly modulated by polymer chain conformation in composite materials, *Nanoscale* **12**, 14560-14572 (2020).
- J37. X. Chen, A. Miller, S. Cao, Y. Gan, J. Zhang, Q. He, R. Q. Wang, **X. Yong**, P. Qin, B. Lapizco-Encinas, K. Du*, Rapid Escherichia coli Trapping and Retrieval from Bodily Fluids via a Three-Dimensional Bead-Stacked Nanodevice, *ACS Appl. Mater. Interfaces* **12**, 7888-7896 (2020) (featured as the complementary cover).
- J36. S. Chen[†], **X. Yong***, Janus Nanoparticles Enable Entropy-Driven Mixing of Bi-component Hydrogels, *Langmuir* **35**, 14840-14848 (2019).
- J35. S. Qin[†], **X. Yong***, Controlling the stability of Pickering emulsions by pH-responsive nanoparticles, *Soft Matter* **15**, 3291-3330 (2019) (featured as the front cover).
- J34. Q. Cheng, W. Xu, S. Qin, S. Das, T. Jin, A. Li, A. C. Li, B. Qie, P. Yao, H. Zhai, C. Shi, **X. Yong**, Y. Yang*, Full Dissolution of the Whole Lithium Sulfide Family (Li₂S₈ to Li₂S) in a Safe Eutectic Solvent for Rechargeable Lithium-Sulfur Batteries, *Angew. Chemie Int. Ed.* **58**, 5557-5561 (2019).
- J33. Y. Li, S. Chen[†], S. Demirci, S. Qin, Z. Xu, E. Olson, F. Liu, D. Palm, **X. Yong***, S. Jiang*,

- Morphology evolution of Janus dumbbell nanoparticles in seeded emulsion polymerization, *J. Colloid Interface Sci.* **543**, 34-42 (2019) (featured as the inside cover).
- J32. M. Zhao[†], W. Luo⁺, **X. Yong***, Harnessing complex fluid interfaces to control colloidal assembly and deposition, *J. Colloid Interface Sci.* **540**, 602-611 (2019).
- J31. A. Li[†], J. W. Schertzer, **X. Yong***, Molecular conformation affects the interaction of the Pseudomonas quinolone signal with the bacterial outer membrane, *J. Biol. Chem.* **294**, 1089-1094 (2019) (selected as the representative "Computational Biology" article for "The year in JBC: 2019" collection and featured in the cover art).
- J30. A. Li[†], J. W. Schertzer, **X. Yong***, Molecular dynamics modeling of Pseudomonas aeruginosa outer membranes, *Phys. Chem. Chem. Phys.* **20**, 23635-23648 (2018).
- J29. S. Chen[†], **X. Yong***, Dissipative particle dynamics modeling of hydrogel swelling by osmotic ensemble method, *J. Chem. Phys.* **149**, 094904 (2018).
- J28. H. N. Dalgamoni[†], **X. Yong***, Axisymmetric lattice Boltzmann simulation of droplet impact on solid surfaces, *Phys. Rev. E* **98**, 013102 (2018).
- J27. K. Miller, A. Tsyrenova, S. M. Anthony, S. Qin[†], **X. Yong***, S. Jiang^{*}, Drying mediated orientation and assembly structure of amphiphilic Janus particles, *Soft Matter* **14**, 6793-6798 (2018) (featured as the back cover).
- J26. A. Ghafouri, M. Zhao[†], T. J. Singler, **X. Yong***, P. R. Chiarot^{*}, Interfacial Targeting of Sessile Droplets Using Electrospray, *Langmuir* **34**, 7445-7454 (2018).
- J25. S. Qin[†], J. Kang⁺, **X. Yong***, Structure and Dynamics of Stimuli-Responsive Nanoparticle Monolayers at Fluid Interfaces, *Langmuir* **34**, 5581-5591 (2018).
- J24. M. Zhao[†], **X. Yong***, Nanoparticle motion on the surface of drying droplets, *Phys. Rev. Fluids* **3**, 034201 (2018).
- J23. N. A. Brown, Y. Zhu, G. K. German, **X. Yong**, P. R. Chiarot^{*}, Electrospray Deposit Structure of Nanoparticle Suspensions, *J. Electrostat.* **90**, 67-73 (2017).
- J22. N. A. Brown, Y. Zhu, A. Li[†], M. Zhao[†], **X. Yong**, P. R. Chiarot^{*}, Electrospray Deposit Structure of Nanoparticle Suspensions, *J. Micro Nano-Manuf.* **5**, 040906 (2017).
- J21. S. Qin[†], **X. Yong***, Interfacial Adsorption of pH-Responsive Polymers and Nanoparticles, *Soft Matter* **13**, 5137-5149 (2017).
- J20. M. Zhao[†], **X. Yong***, Modeling Evaporation and Particle Assembly in Colloidal Droplets, *Langmuir* **33**, 5734-5744 (2017).
- J19. **X. Yong***, Hydrodynamic Interactions and Entanglements of Polymer Solutions in Many-Body Dissipative Particle Dynamics, *Polymers* **8**, 426 (2016).
- J18. **X. Yong***, S. Qin[†], T. J. Singler, Nanoparticle-Mediated Evaporation at Liquid-Vapor Interfaces, *Extreme Mechanics Letters* **7**, 90-103 (2016).
- J17. **X. Yong***, Modeling the Assembly of Polymer-Grafted Nanoparticles at Oil-Water Interfaces, *Langmuir* **31**, 11458-11469 (2015).
- J16. Y. Liu, **X. Yong**, G. McFarlin, O. Kukseknok, J. Aizenberg, A. C. Balazs^{*}, Designing a gel-fiber composite to extract nanoparticles from solution, *Soft Matter* **11**, 8692-8700 (2015).
- J15. Y. Liu, G. T. McFarlin, IV, **X. Yong**, O. Kukseknok, A. C. Balazs^{*}, Designing Composite Coatings That Provide a Dual Defense against Fouling, *Langmuir* **31**, 7524-7532 (2015).

- J14. **X. Yong**, O. Kukseknok, A. C. Balazs*, Modeling free radical polymerization using dissipative particle dynamics, *Polymer* **72**, 217-225 (2015).
- J13. **X. Yong**, A. Simakova, S. Averick, J. Gutierrez, O. Kukseknok, A. C. Balazs*, K. Matyjaszewski*, Stackable, Covalently Fused Gels: Repair and Composite Formation, *Macromolecules* **48**, 1169-1178 (2015).
- J12. S. Averick, O. Karácsny, J. Mohin, **X. Yong**, N. M. Moellers, B. F. Woodman, W. Zhu, R. A. Mehl, A. C. Balazs*, T. Kowalewski*, K. Matyjaszewski*, Cooperative, Reversible Self-Assembly of Covalently Pre-Linked Fiber Proteins into Giant Fibrous Structures, *Angew. Chemie Int. Ed.* **53**, 8050-8055 (2014).
- J11. O. Kuksenok, D. Deb, **X. Yong**, A. C. Balazs*, Designing biomimetic reactive polymer gels, *Mater. Today* **17**, 486-493 (2014).
- J10. **X. Yong**, E. J Crabb, N. M. Moellers, A. C. Balazs*, Self-healing Vesicles Deposit Lipid-coated Janus Particles into Nanoscopic Trenches, *Langmuir* **29**, 16066-16074 (2013).
- J9. **X. Yong**, O. Kuksenok, K. Matyjaszewski, A. C. Balazs*, Harnessing Interfacially-Active Nanorods to Regenerate Severed Polymer Gels, *Nano Lett.* **13**, 6269-6274 (2013); Highlighted in: BBC News, Yahoo News.
- J8. **X. Yong**, L. T. Zhang*, Toward Generating Low-Friction Nanoengineered Surfaces with Liquid-Vapor Interfaces, *Langmuir* **29**, 12623-12627 (2013).
- J7. **X. Yong**, L. T. Zhang*, Thermostats and thermostat strategies for molecular dynamics simulations of nanofluidics, *J. Chem. Phys.* **138**, 084503 (2013).
- J6. I. Salib,[§] **X. Yong**,[§] E. J Crabb, N. M. Moellers, G. T. McFarlin, IV, O. Kuksenok, A. C. Balazs*, Harnessing Fluid-Driven Vesicles to Pick Up and Drop Off Janus Particles, *ACS Nano* **7**, 1224-1238 (2013) ([§] equal contribution); Highlighted in: *Nature Nanotech.* **8**, 157 (2013).
- J5. **X. Yong**, L. T. Zhang*, Slip in nanoscale shear flow: mechanisms of interfacial friction, *Microfluid. Nanofluid.* **14**, 299-308 (2013).
- J4. **X. Yong**, L. T. Zhang*, Nanoscale simple fluid behavior under steady shear, *Phys. Rev. E* **85**, 051202 (2012).
- J3. **X. Yong**, L. T. Zhang*, Examining different NEMD methods in simulating nanoscale fluid at high shear rates, *Proc. Inst. Mech. Eng. Part N J. Nanoeng. Nanosyst.* **224**, 19-29 (2010).
- J2. **X. Yong**, L. T. Zhang*, Investigating liquid-solid interfacial phenomena in a Couette flow at nanoscale, *Phys. Rev. E* **82**, 056313 (2010).
- J1. **X. Yong**, L. T. Zhang*, Nanoscale Wetting on Groove-Patterned Surfaces, *Langmuir* **25**, 5045-5053 (2009).

INVITED TALKS AND SEMINARS

- T18. Complex Transport Phenomena at Soft Matter Interfaces, University at Buffalo, Department of Mechanical and Aerospace Engineering, 01/25/2024.
- T17. Colloidal monolayer formation at fluid interfaces: Brownian dynamics simulation and electrospray experiments, *2023 Society of Engineering Science Annual Technical Meeting*, Minneapolis, MN, 10/18/2023.

- T16. Probing charged particle assembly at curved fluid interfaces via computational modeling and electrospray experiment, *ACS Fall 2023 National Meeting*, San Francisco, CA, 08/13/2023.
- T15. Mesoscale modeling of reaction and assembly at colloid-polymer interface, *ACS Northeastern Region Meeting 2022*, Rochester, NY, 10/03/2022.
- T14. Modeling Soft Matter Interfaces on Mesoscale, *Complex Fluids and Soft Matter (CFSM) Seminar Series*, Virtual, 08/10/2022.
- T13. Multiscale Simulations of Biomembrane Interactions with Small Molecules and Nanoparticles, *SIAM Conference on Mathematical Aspects of Materials Science (MS21)*, Virtual, 05/27/2021.
- T12. Colloids at Fluid Interfaces: Interaction, Transport, and Assembly, Rensselaer Polytechnic Institute, Department of Mechanical, Aerospace, and Nuclear Engineering, Virtual, 11/11/2020.
- T11. Colloids at Evaporating Fluid Interfaces: Transport and Assembly, New Jersey Institute of Technology, Department of Mathematical Sciences, Fluid Mechanics and Waves Seminar, Virtual, 10/26/2020.
- T10. Computational and Theoretical Modeling of Janus Particles at Interfaces and Surfaces, *1st Global Symposium on Janus Particles (GSJP2020)*, Virtual, 10/01/2020.
- T9. Atomistic Modeling of Small-Molecule Induced Outer Membrane Vesicle Formation, *The Second Joint SIAM/CAIMS Annual Meeting (AN20)*, Virtual, 07/09/2020.
- T8. Transport Phenomena at Soft Matter Interfaces, Binghamton University, Department of Mechanical Engineering, Binghamton, NY, 10/30/2019.
- T7. Small Molecule-Membrane Interactions Drive Bacterial Membrane Vesicle Formation, University of Vermont, Department of Physics, Burlington, VT, 10/23/2019.
- T6. Computational Modeling of Colloids at Fluid Interfaces, University at Buffalo, Department of Mechanical and Aerospace Engineering, Buffalo, NY, 10/10/2019.
- T5. Brand new “coffee ring”: interfacial transport and assembly, Iowa State University, Department of Materials Science and Engineering, Ames, IA, 04/11/2019.
- T4. Brand new “coffee ring”: interfacial transport and assembly, Rochester Institute of Technology, Department of Mechanical Engineering, Rochester, NY, 04/04/2019.
- T3. pH-responsive polymer-grafted nanoparticles: from colloidal monolayer to Pickering emulsion,” *256th ACS National Meeting & Exposition*, Boston, MA, 08/20/2018.
- T2. Designing Bio-inspired Functional Materials, University of Illinois at Chicago, Department of Mechanical and Industrial Engineering, Chicago, IL, 04/01/2014.
- T1. Designing Bio-inspired Functional Materials, Binghamton University, Department of Mechanical Engineering, Binghamton, NY, 03/25/2014.

CONTRIBUTED TALKS AND POSTERS

(presenter name is underlined; [†] graduate students and ⁺ undergraduate students in Yong's group)

- C93. H. Liu, X. Yong, K. Du, Y. Gan, Quantifying the algae and toxic nanoparticle interactions using optical coherence tomography, *SPIE Photonics West 2025*, San Francisco, CA, 01/29/2025.
- C92. J. M. Prisaznuk, X. Yong, P. Huang, P. R. Chiarot, Colloidal Assembly of Electrosprayed Particles at a Static Water-Air Interface, *77th Annual Meeting of the American Physical*

Society's Division of Fluid Dynamics, Salt Lake City, UT, 11/26/2024

- C91. M. Emon[†], G. R. Pradipta, X. Cheng, **X. Yong**, Modeling Fluid Flow of Free-Swimming Algae Using Modified Three-Sphere Models, *77th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Salt Lake City, UT, 11/25/2024.
- C90. J. M. Prisaznuk, **X. Yong**, P. Huang, P. R. Chiarot, Interface-Mediated Electrospray Deposition: Understanding the Efficacy of Material Delivery using Substrate Focusing Methods, *APS March Meeting 2024*, Minneapolis, MN, 03/06/2024 (Poster).
- C89. G. R. Pradipta, V. Tran, S. K. Sankar, K. J. Welch, J. Hong, **X. Yong**, X. Cheng, Seeing new depths: visualizing three-dimensional flow of free-swimming alga with holographic microscopy, *APS March Meeting 2024*, Minneapolis, MN, 03/05/2024.
- C88. D. A. Redwan[†], K. Du, **X. Yong**, Dynamic Mesh-based Simulations of Vesicle Interactions with Anisotropic Nanoparticles, *APS March Meeting 2024*, Minneapolis, MN, 03/05/2024.
- C87. N. Amiri[†], J. M. Prisaznuk, P. Huang, P. R. Chiarot, **X. Yong**, Modeling Electrosprayed Particle Assembly on Geometrically Controlled Sessile Droplet Surfaces through Brownian Dynamics Simulations, *APS March Meeting 2024*, Minneapolis, MN, 03/05/2024.
- C86. **X. Yong**, E. Pirhadi[†], Physical Response of *Pseudomonas Aeruginosa* Outer Membrane to Signaling Molecule Insertion, *APS March Meeting 2024*, Minneapolis, MN, 03/04/2024.
- C85. D. A. Redwan[†], K. Du, **X. Yong**, Probing wrapping dynamics of spherical nanoparticles by 3D vesicles using force-based simulations, *BPS 2024 Annual Meeting*, Philadelphia, PA, 02/12/2024.
- C84. E. Pirhadi[†], **X. Yong**, Influences of PQS intercalation on physical properties of *Pseudomonas aeruginosa* outer membrane, *BPS 2024 Annual Meeting*, Philadelphia, PA, 02/11/2024.
- C83. G. R. Pradipta, V. Tran, R. Goharimehr[†], S. K. Sankar, J. Hong, **X. Yong**, X. Cheng, Seeing new depths: visualizing the three-dimensional flow field of a free-swimming alga, *76th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Washington, DC, 11/20/2023.
- C82. **X. Yong**, N. Amiri, J. Prisaznuk, P. R. Chiarot, Brownian dynamics modeling of the assembly of electrosprayed particles on sessile droplet surfaces, *76th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Washington, DC, 11/20/2023.
- C81. J. M. Prisaznuk, **X. Yong**, P. Huang, P. R. Chiarot, Electrospray Deposition of Colloidal Particles to Controllable Water-Air Interfaces, *76th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Washington, DC, 11/19/2023.
- C80. J. M. Prisaznuk, **X. Yong**, P. Huang, P. R. Chiarot, Assembly of conductive and insulative particles on non-axisymmetric droplet interfaces via electrospray, *97th ACS Colloid and Surface Science Symposium*, Raleigh, NC, 06/07/2023.
- C79. E. Pirhadi[†], H. Al Tarify[†], J. W. Shertzer, **X. Yong**, Probing Interactions of PQS Analogs with Outer Membranes of *Pseudomonas Aeruginosa* Bacteria, *APS March Meeting 2023*, Las Vegas, NV, 03/06/2023.
- C78. **X. Yong**, J. M. Blisko[†], M. J. Grzenda, R. M. Vladimirovsky, C. E. Shuck, J. P. Singer, Controlling morphology in electrosprayed methylcellulose nanowires via nanoparticle addition, *APS March Meeting 2023*, Las Vegas, NV, 03/06/2023.

- C77. J. M. Prisaznuk, P. Huang, **X. Yong**, P. R. Chiarot, Assembly of Electrically Charged Particles on Asymmetric Droplet Interfaces, *APS March Meeting 2023*, Las Vegas, NV, 03/08/2023.
- C76. **X. Yong**, K. Du, Shape effect on interaction dynamics of tetrahedral nanoplastics and cell membrane, *APS March Meeting 2023*, Las Vegas, NV, 03/08/2023 (Poster).
- C75. N. Amiri[†], **X. Yong**, Brownian dynamics modeling of colloidal assembly on curved interfaces subject to isotropic and anisotropic electrostatic interactions, *APS March Meeting 2023*, Las Vegas, NV, 03/10/2023.
- C74. E. Pirhadi[†], C. Gopal, H. Al Tarify[†], J. M. Vanegas, J. W. Schertzer, **X. Yong**, Accurate molecular dynamics modeling of *Pseudomonas aeruginosa* outer membrane interaction with signaling molecules, *BPS 67th Annual Meeting*, San Diego, CA, 02/20/2023 (Poster).
- C73. M. Grzenda, M. Atzampou, J. Blisko[†], R. Vladimirsky, K. Hughes, C. Shuck, **X. Yong**, J. Zahn, J. Singer, Targeted Functional Methylcellulose-Nanocomposite Materials via Self-Limiting Electro spray Deposition, *2022 MRS Fall Meeting*, Boston, MA, 11/28/2022.
- C72. J. M. Prisaznuk, N. Amiri[†], **X. Yong**, P. Huang, P. R. Chiarot, Colloidal Assembly on Non-Axisymmetric Droplet Interfaces via Electro spray, *75th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Indianapolis, IN, 11/21/2022.
- C71. **X. Yong**, S. Chen[†], E. Pirhadi[†], Modeling necking dynamics of viscoelastic microgels, *75th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Indianapolis, IN, 11/21/2022.
- C70. D. Redwan[†], K. Du, **X. Yong**, Computational modeling of interactions between arbitrarily shaped nanoplastics and cell membranes, *ACS Northeast Region Meeting 2022*, Rochester, NY, 10/03/2022.
- C69. E. Pirhadi[†], J. W. Schertzer, **X. Yong**, Mechanical Properties of *Pseudomonas Aeruginosa* Outer Membrane, *APS March Meeting 2022*, Chicago, IL, 03/17/2022.
- C68. **X. Yong**, E. Pirhadi[†], X. Cheng, Equation of State and Reentrant Collision of Active Dumbbells under Stiff Wall Interactions, *APS March Meeting 2022*, Chicago, IL, 03/15/2022.
- C67. J. M. Prisaznuk, **X. Yong**, P. Huang, P. R. Chiarot, Probing Colloidal Assembly on Non-Axisymmetric Droplet Surfaces via Electro spray, *74th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Phoenix, AZ, 11/22/2021.
- C66. J. M. Prisaznuk, **X. Yong**, P. Huang, P. R. Chiarot, Colloidal Assembly on Geometrically Controlled Droplets via Electro spray, *32nd Annual Electronics Packaging Symposium*, Virtual, 09/06/2021.
- C65. E. Pirhadi[†], **X. Yong**, Wall stiffness effects on the pressure of active rods, *APS March Meeting 2021*, Virtual, 03/15/2021.
- C64. **X. Yong**, S. Chen[†], Microgel Interactions over Full Temperature Range, *73rd Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Virtual, 11/23/2020.
- C63. L. Lei, S. Chen[†], C. Nachtigal, T. Moy⁺, **X. Yong**, J. P. Singer, Nanowire Forests Deposited via Homogeneous Gelation in Electro spray Deposition, *ASME IMECE Meeting 2020*, Virtual, 11/18/2020.
- C62. S. Chen[†], **X. Yong**, Modelling Nanowire Formation in Electro spray Deposition of Polymeric Droplets, *APS March Meeting 2020*, Virtual, 03/05/2020.

- C61. L. Lei, C. Nachtigal, S. Chen[†], T. Moy⁺, **X. Yong**, J. P. Singer, Electro spray deposition of nanowire forests through spinodal gellation, *APS March Meeting 2020*, Virtual, 03/05/2020.
- C60. **X. Yong**, H. N. Dalgamoni[†], Axisymmetric Lattice Boltzmann Simulation of Droplet Impact on Spherical Surfaces, *72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Seattle, WA, 11/25/2019.
- C59. A. Ghafouri, T. J. Singler, **X. Yong**, P. R. Chiarot, Transport and Deposit Structure for Particle-laden Binary Rivulets, *72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Seattle, WA, 11/25/2019.
- C58. P. R. Chiarot, A. Ghafouri, T. J. Singler, **X. Yong**, Using Electro spray to Probe the Interfacial Flow of Evaporating Fluid Masses, *72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Seattle, WA, 11/25/2019 (Flash Oral Presentation).
- C57. S. Chen[†], **X. Yong**, The Influence of Polymer Conformation on Nanoparticle Assembly in Composite Materials, *16th Annual Conference on Frontiers in Applied and Computational Mathematics jointly with 11th Northeast Complex Fluids and Soft Matter Workshop*, NJIT, NJ, 05/24/2019 (Poster).
- C56. **X. Yong**, M. Zhao[†], W. Luo⁺, Harnessing Complex Fluid Interfaces to Control Colloidal Assembly and Deposition, *APS March Meeting 2019*, Boston, MA, 03/07/2019.
- C55. S. Chen[†], **X. Yong**, Mesoscale modeling of polymer bigels using Janus particles, *APS March Meeting 2019*, Boston, MA, 03/07/2019.
- C54. H. N. Dalgamoni[†], **X. Yong**, Axisymmetric Lattice Boltzmann Model of Droplet Impact on Curved Surfaces, *APS March Meeting 2019*, Boston, MA, 03/07/2019.
- C53. A. Li[†], J. W. Schertzer, **X. Yong**, Atomistic modeling of molecule-lipid interactions to understand small-molecule induced outer membrane vesicle biogenesis in Gram-negative bacteria, *APS March Meeting 2019*, Boston, MA, 03/05/2019 (APS-DBIO Travel Award).
- C52. S. Qin[†], **X. Yong**, Microrheology of pH-Responsive Nanoparticle Monolayers at Fluid Interfaces, *APS March Meeting 2019*, Boston, MA, 03/04/2019.
- C51. M. Zhao[†], **X. Yong**, Surfactant effect on collective dynamics of surface-associated bacterial particles, *APS March Meeting 2019*, Boston, MA, 03/04/2019.
- C50. A. Li[†], J. W. Schertzer, **X. Yong**, Characteristic Conformations of Pseudomonas Quinolone Signal Interacting with Bacterial Outer Membrane, *BPS 63d Annual Meeting*, Baltimore, MD, 03/03/2019 (BPS Travel Award).
- C49. **X. Yong**, M. Zhao[†], W. Luo⁺, Collective behavior of active matters, *10th Northeast Complex Fluids and Soft Matter*, Rutgers University, NJ, 01/11/2019.
- C48. **X. Yong**, S. Qin[†], Capillary-Induced Assembly of Janus Particles in Drying Films, *71st Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Atlanta, GA, 11/20/2018.
- C47. A. Ghafouri, T. J. Singler, **X. Yong**, P. R. Chiarot, Flow Characteristics and Deposit Structure for Particle-laden Rivulets, *71st Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Atlanta, GA, 11/18/2018.
- C46. M. Zhao[†], **X. Yong**, Colloidal assembly on the surface of drying sessile droplets, *71st Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Atlanta, GA, 11/18/2018.

- C45. S. Qin[†], **X. Yong**, Modeling evaporation-driven deposition of Janus particles, *256th ACS National Meeting & Exposition*, Boston, MA, 08/20/2018.
- C44. **X. Yong**, Particle Transport and Deposition in Drying Sessile Droplets with Soluble Surfactant, *27th International Conference on Discrete Simulation of Fluid Dynamics*, Worcester, MA, 06/28/2018.
- C43. M. Zhao[†], **X. Yong**, Mesoscale Simulations of Nanoparticle Deposition in Evaporating Colloidal Droplets, *18th U.S. National Congress for Theoretical and Applied Mechanics*, Chicago, IL, 06/2018.
- C42. S. Qin[†], **X. Yong**, T. J. Singler, Nanoparticle-mediated Evaporation at Liquid-vapor Interfaces, *18th U.S. National Congress for Theoretical and Applied Mechanics*, Chicago, IL, 06/08/2018.
- C41. S. Chen[†], **X. Yong**, Mesoscale Modeling of Swelling Kinetics of Hydrogels, *APS March Meeting 2018*, Los Angeles, CA, 03/06/2018.
- C40. S. Qin[†], **X. Yong**, J. Kang⁺, Structure and Dynamics of pH-Responsive Nanoparticle Assembly at Oil-Water Interfaces, *APS March Meeting 2018*, Los Angeles, CA, 03/06/2018.
- C39. **X. Yong**, M. Zhao[†], Mesoscale Simulation of Nanoparticle Deposition in Evaporating Colloidal Droplet, *APS March Meeting 2018*, Los Angeles, CA, 03/07/2018.
- C38. A. Li[†], **X. Yong**, MOLECULAR DYNAMICS MODELING OF PSEUDOMONAS AERUGINOSA BIOLOGICAL MEMBRANE, *BPS 62nd Annual Meeting*, San Francisco, CA, 02/19/2018 (Poster).
- C37. H. N. Dalgamoni[†], **X. Yong**, Axisymmetric Lattice Boltzmann Model of Droplet Impact on Solid Surfaces, *70th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Denver, CO, 11/21/2017.
- C36. M. Zhao[†], **X. Yong**, 3D Lattice Boltzmann-Brownian Dynamics Simulations of Nanoparticle Deposition in Evaporating Liquid Masses, *70th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Denver, CO, 11/21/2017.
- C35. A. Ghafouri, T. J. Singler, **X. Yong**, P. R. Chiarot, Deposit Structure for Particle-laden Droplets Targeted by Electrospray, *70th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Denver, CO, 11/21/2017.
- C34. M. Zhao[†], **X. Yong**, Mesoscale Modeling of Marangoni Convection in Evaporating Colloidal Droplets, *70th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Denver, CO, 11/20/2017 (Poster).
- C33. **X. Yong**, A. Li[†], N. A. Brown, M. Zhao[†], Y. Zhu, G. K. German, P. R. Chiarot, Computational and Experimental Studies of Electrospray Deposition of Nanoparticle Suspensions, *70th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Denver, CO, 11/20/2017.
- C32. **X. Yong**, Modeling Interfacial Behavior of Responsive Polyelectrolyte-Grafted Nanoparticles, *14th U.S. National Congress Conference of Computational Mechanics*, Montreal, QC, Canada, 07/18/2017.
- C31. N. A. Brown, Y. Zhu, A. Li[†], M. Zhao[†], **X. Yong**, P. R. Chiarot, STRUCTURE OF ELECTROSPRAY PRINTED DEPOSITS FOR SHORT SPRAY TIMES, *ASME 2017 International Manufacturing Science and Engineering Conference*, Los Angeles, CA, 06/04/2017.

- C30. S. Qin[†], **X. Yong**, Modeling pH-Responsive Adsorption of Polyelectrolytes at Oil-Water Interfaces, *APS March Meeting 2017*, New Orleans, LA, 03/15/2017.
- C29. **X. Yong**, Many-Body Dissipative Particle Dynamics Simulations of Polymer Solutions: Hydrodynamic Interactions and Entanglements, *APS March Meeting 2017*, New Orleans, LA, 03/16/2017.
- C28. S. Qin[†], **X. Yong**, Mesoscale Simulations of pH-Responsive Swelling of Polyelectrolyte Complexes, *APS March Meeting 2017*, New Orleans, LA, 03/15/2017 (Poster).
- C27. M. Zhao[†], **X. Yong**, Lattice Boltzmann Simulations of Evaporating Droplets with Nanoparticles, *69th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Portland, OR, 11/21/2016.
- C26. **X. Yong**, S. Qin[†], Modeling Oblique Impact Dynamics of Particle-Laden Nanodroplets, *69th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Portland, OR, 11/21/2016.
- C25. P. R. Chiarot, M. Daeumer, S. Maktabi, **X. Yong**, Targeting Sessile Droplets with Electrospray to Form Nanoparticle Deposits, *69th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Portland, OR, 11/21/2016.
- C24. M. Zhao[†], **X. Yong**, 3D Lattice Boltzmann Modeling of Nanoparticle Self-Assembly in Evaporating Droplets and Rivulets, *69th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Portland, OR, 11/21/2016 (Poster).
- C23. **X. Yong**, Harnessing Nanoparticles to Control Evaporation at Liquid-Vapor Interfaces, *68th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Boston, MA, 11/22/2015.
- C22. M. Zhao[†], **X. Yong**, Modeling Droplet Evaporation Using Free-Energy Lattice Boltzmann Method, *68th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Boston, MA, 11/22/2015 (Poster) (APS-DFD Travel Award).
- C21. A. Li[†], J. Fideles da Silva⁺, **X. Yong**, Modeling Electrospray Deposition of Nanoparticle Inks, *68th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Boston, MA, 11/22/2015 (Poster).
- C20. **X. Yong**, Modeling Stimuli-Responsive Nanoparticle Monolayer, *APS March Meeting 2015*, San Antonio, TX, 03/04/2015.
- C19. Y. Liu, G. T. McFarlin, IV, **X. Yong**, O. Kuksenok, A. C. Balazs, Designing thermo-responsive nanocomposites with anti-fouling properties, *APS March Meeting 2015*, San Antonio, TX, 03/04/2015 (Poster).
- C18. **X. Yong**, Modeling Interfacial Adsorption of Polymer-Grafted Nanoparticles, *67th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, San Francisco, CA, 11/24/2014.
- C17. **X. Yong**, S. Averick, O. Kuksenok, K. Matyjaszewski, A. C. Balazs, Utilizing ATRP to Design Self-Regenerating Polymer Gels, *2014 MRS Spring Meeting*, San Francisco, CA, 04/24/2014.
- C16. **X. Yong**, G. T. McFarlin, IV, O. Kuksenok, A. C. Balazs, Manipulating the Motion of Nanoparticles on Stimuli-Responsive, Fiber-Filled Gels, *2014 MRS Spring Meeting*, San Francisco, CA, 04/24/2014 (Poster).

- C15. **X. Yong**, O. Kuksenok, K. Matyjaszewski, A. C. Balazs, Harnessing Interfacially-Active Nanorods to Regenerate Severed Polymer Gels, *APS March Meeting 2014*, Denver, CO, 03/06/2014.
- C14. **X. Yong**, S. Averick, O. Kuksenok, K. Matyjaszewski, A. C. Balazs, Utilizing ATRP to Design Self-Regenerating Polymer Gels, *APS March Meeting 2014*, Denver, CO, 03/05/2014 (Poster).
- C13. **X. Yong**, E. J Crabb, N. M. Moellers, I. Salib, G. T. rMcFarlin ,IV, O. Kuksenok, A. C. Balazs, Transporting Janus Nanoparticles Using Self-Healing Vesicles, *66th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Pittsburgh, PA, 11/25/2013.
- C12. G. T. McFarlin, IV, **X. Yong**, O. Kuksenok, A. C. Balazs, Using Thermo-Responsive, Fiber-Filled Gels to Control Droplet Motion, *66th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Pittsburgh, PA, 11/24/2013 (Poster).
- C11. **X. Yong**, Lucy T. Zhang, Toward Generating Low-Friction Nanoengineered Surfaces with Liquid-Vapor Interfaces, *66th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Pittsburgh, PA, 11/24/2013 (Poster).
- C10. **X. Yong**, Designing Smart Interfaces by Utilizing Nanoengineered Adaptive Materials, *2013 AIChE Annual Meeting*, San Francisco, CA, 11/2013 (Poster).
- C9. **X. Yong**, O. Kuksenok, K. Matyjaszewski, A. C. Balazs, Harnessing Interfacially-Active Nanorods to Regenerate Severed Polymer Gels, *2013 AIChE Annual Meeting*, San Francisco, CA, 11/03/2013 (Poster).
- C8. **X. Yong**, G. T. McFarlin, IV, O. Kuksenok, A. C. Balazs, Manipulating the Motion of Droplets on Stimuli-Responsive, Fiber-Filled Gels, *2013 AIChE Annual Meeting*, San Francisco, CA, 11/04/2013 (Poster).
- C7. **X. Yong**, I. Salib, E. J Crabb, N. M. Moellers, G. T. McFarlin, IV, O. Kuksenok, A. C. Balazs, Harnessing Fluid-Driven Vesicles to Pick Up and Drop Off Janus Particles, *APS March Meeting 2013*, Baltimore, MD, 03/19/2013.
- C6. **X. Yong**, O. Kuksenok, A. C. Balazs, Dissipative Particle Dynamics Modeling of Volume Phase Transition in Gels, *APS March Meeting 2013*, Baltimore, MD, 03/20/2013 (Poster).
- C5. E. J Crabb, N. M. Moellers, **X. Yong**, I. Salib, A. C. Balazs, Selective Sorting of Janus Nanoparticles on Topographically-Patterned Surfaces, *APS March Meeting 2013*, Baltimore, MD, 03/20/2013 (Poster).
- C4. **X. Yong**, L.T. Zhang, Slip in nanoscale shear flow: mechanisms of interfacial friction, *64th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Baltimore, MD, 11/20/2011.
- C3. **X. Yong**, L. T. Zhang, Discussing Models of Walls and Thermostats for Shear Flow Simulations in Nanoscale Environments, *11th U.S. National Congress Conference of Computational Mechanics*, Minneapolis, MN, 07/27/2011.
- C2. **X. Yong**, L. T. Zhang, Molecular dynamics simulation of non-Newtonian phenomena and shear-induced structural changes in atomic fluids, *63rd Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Long Beach, CA, 11/21/2010.
- C1. **X. Yong**, L. T. Zhang, Boundary Condition and Shear-induced Structure Change of Dense Fluid in Simple Nanoscale Shear Flows, *ASME IMECE Meeting 2010*, Vancouver, BC, 11/17/2010 (Oral and Poster).

- C0. **X. Yong**, L. T. Zhang, Understanding the nanoscale liquid-solid interfacial phenomena in a Couette flow, *62nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Minneapolis, MN, 11/23/2009.
- C-1. **X. Yong**, L. T. Zhang, Contact angle of nanoscale droplet on anisotropic textured surfaces, *10th U.S. National Congress Conference of Computational Mechanics*, Columbus, OH, 07/27/2009.
- C-2. **X. Yong** and **L. T. Zhang**, Nanoscale droplet wetting on nano-patterned surfaces, *ASME IMECE Meeting 2008*, Boston, MA, 11/2/2008 (Poster).

GRADUATE STUDENT ADVISING

Dissertations/These Directed (as major professor unless otherwise indicated)

Ph.D. degrees

Binghamton University

5. Shensheng Chen, Ph.D., 08/2016-12/2020 "Mesoscale Modeling of Polymer Gels and Polymer Nanocomposites"
Assistant Professor, Department of Chemical and Biological Engineering, Hong Kong University of Science and Technology, China
4. Hussein N. Dalgamoni, Ph.D., 02/2016-12/2019
"Axisymmetric Lattice Boltzmann Model of Droplet Impact on Solid Surfaces"
Assistant Professor, Department of Mechanical Engineering, Hashemite University, Jordan
3. Ao Li, Ph.D., 08/2016-09/2019
"Numerical Modeling of Small Molecule Induced Outer Membrane Vesicle Biogenesis"
Working at MathWorks
2. Shiyi Qin, Ph.D., 08/2015-06/2019
"Numerical Modeling of Stimuli-Responsive Composite Colloid at Water-Oil Interfaces"
Associate Researcher, Shenzhen Bay Laboratory, China
1. Mingfei Zhao, Ph.D., 01/2015-03/2019
"Numerical Modeling of Particle Assembly in Evaporating Colloidal Droplets"
Assistant Professor, Department of Chemical and Biological Engineering, University of Alabama

M.S. degrees

Binghamton University

6. Hasan Al Tarify, M.S., 08/21-05/2023
"Numerical Investigation of Pseudomonas Quinolone Signal Analogs Interacting with the Pseudomonas Aeruginosa Outer Membrane"
Ph.D. student, Department of Mechanical Engineering, University of Minnesota
5. Didarul Redwan, M.S., 08/21-05/2023
Ph.D. student, Department of Mechanical and Aerospace Engineering, University at Buffalo
4. Emad Pirhadi, M.S., 08/2019-05/2021
"Effects of Confinement on Pressure of Self-Propelled Dumbbells"
Ph.D. student, Department of Mechanical and Aerospace Engineering, University at Buffalo
3. Chunheng Zhao, M.S., 08/2016-05/2018

“Investigation of the Plateau-Rayleigh Instability of Fluid Rivulets Using the Lattice Boltzmann Method”

Postdoctoral Researcher, Department of Mechanical Engineering, City College of New York

2. Ao Li, M.S., 08/2014-05/2016

“Numerical simulations of electrospray deposition of nanoparticle inks”

Working at MathWorks

1. Peijun Yu, M.S., 08/2014-05/2016

“Mesoscale modeling of mechanical responses in polymeric systems”

Dissertations/These in Progress

University at Buffalo

4. Emad Pirhadi, Ph.D., University at Buffalo, 06/2021-present, degree expected 05/2025

3. Didarul Redwan, Ph.D., University at Buffalo, 08/2021-present, degree expected 12/2025

2. Nasir Amiri, Ph.D., University at Buffalo, 08/2021-present, degree expected 05/2026

1. Md Iftekhar Yousuf Emon, Ph.D., University at Buffalo, 08/2023-present, degree expected 05/2027

Special Achievements of Graduate Students

Shensheng Chen, ME Department Graduate Student Award for Academic Excellence in Research, Binghamton University, 05/2021

Shiyi Qin, ME Department Graduate Student Award for Academic Excellence in Research, Binghamton University, 05/2020

Mingfei Zhao, Watson Graduate Research Ambassador Award, Binghamton University, 05/2018

Dissertation/Thesis Committee Member

Binghamton University

Guangfa Li	Ph.D.	Mechanical Engineering	Expected 05/2026
Joseph Prisaznuk	Ph.D.	Mechanical Engineering	Expected 05/2025
Emma Pawliczak	Ph.D.	Mechanical Engineering	Expected 05/2025
Jiaxu Song	Ph.D.	Mechanical Engineering	Expected 05/2025
Bryce Kinsley	Ph.D.	Mechanical Engineering	Defended 07/2024
Xianhu Sun	Ph.D.	Mechanical Engineering	Defended 01/2022
Preeth Sivakumar	Ph.D.	Mechanical Engineering	Defended 12/2021
Aref Ghafouri	Ph.D.	Mechanical Engineering	Defended 04/2021
Sepehr Maktabi	Ph.D.	Mechanical Engineering	Defended 07/2020
Mahdi Farahikia	Ph.D.	Mechanical Engineering	Defended 06/2019
Liang Liu	Ph.D.	Mechanical Engineering	Defended 04/2019
Fei Dong	Ph.D.	Mechanical Engineering	Defended 07/2018
Ah-Young Park	Ph.D.	Mechanical Engineering	Defended 02/2017
Rajeshwari Jotawar	M.S.	Biomedical Engineering	Defended 11/2021
Christopher Dmuchowski	M.S.	Materials Science and Engineering	Defended 04/2016
Weitao Shan	M.S.	Materials Science and Engineering	Defended 05/2016

UNDERGRADUATE AND VISITING STUDENT ADVISING

Undergraduate Research Mentoring*Binghamton University*

Javier Guadalupe (B.S. 2025, Mechanical Engineering)
Justin Reicher (B.S. 2024, Mechanical Engineering)
Gottlieb Teoli (B.S. 2024, Mechanical Engineering)
Ryan Ginley (B.S. 2024, Biomedical Engineering)
Mithila Farin (Double B.S. 2022, Mathematics and Biochemistry)
Tyler F. Moy (B.S. 2020, Mechanical Engineering)
Adrian J. Diaz (B.S. 2020, Mechanical Engineering)
Jonathan M. Blisko (B.S. 2020, Mechanical Engineering)
Joseph M. Prisaznuk (B.S. 2020, Mechanical Engineering)
Pranshu Babber (B.S. 2020, Mechanical Engineering)
Rebecca E. Schneider (B.S. 2020, Mechanical Engineering)
Wilson Luo (B.S. 2019, Mechanical Engineering)
Andy Zou (B.S. 2019, Mechanical Engineering)
Tanjil S. Uddin (B.S. 2019, Biological Sciences)
Lawrence Zhang (B.S. 2018, Biological Sciences)
Junhyunk Kang (B.S. 2018, Mechanical Engineering)
Giomar I. Condori (B.S. 2018, Biological Sciences)
Jiamin Li (B.S. 2017, Mathematics)
Sumiao Pang (B.S. 2016, Bioengineering)
Juan C. Medina (B.S. 2016, Mechanical Engineering)
Jefferson Fideles da Silva (Visiting Scholar from the Federal University of Minas Gerais, Brazil)

University of Pittsburgh

Stephen C. Snow (B.S. 2017, Computer Engineering)
Gerald T. McFarlin, IV (B.S. 2014, Chemical Engineering)
Emily J Crabb (Double B.S. 2015, Computer Engineering/Physics) (2014 Barry M. Goldwater Scholarship winner)
Nicholas M. Moellers (B.S. 2015, Computer Engineering)

High School Research Mentoring

Kyra Cheung, 07/2023-09/2023, Plainview Old Bethpage John F Kennedy High School

Undergraduate Capstone Project Advising

Mars Rover Wheels

2023-2024: James Raymond, Sophia Romero, Janothan Sarasohn

Liquid Puzzle

2022-2023: Dede Bavon, Allison Garippo, Ben Manning, Priscilla Pomerantz, Adam Reichert

EZ Cargo Platform

2021-2022: Jeremy Hirsch, Thomas Rady, Andrew Aeberli, Benjamin Uline

2020-2021: Ryan Phillips, Mike Pollichino, Patrick Kelly

Human Powered Vehicle Challenge

2021-2022: Edward Soriano, Matthew Allawh, Margaret Baker, Kyle Bulko, Kathryn Healy

2020-2021: Dominik Kovalcik, Jerry Mathew, Stephen Melvin, Christopher Mueller, Elijah Philbert

2019-2020: Victoria A Schutrum, Jan P Cygan, Brendan M Sullivan, Edward A Roth, Jyoshith Anand

2018-2019: Joseph Anderson, Godfrey Fenton, Samuel Lamont, Anthony Lord, Edgar Sarmiento

2017-2018: Matthew S. Woodworth, Thomas J. Brinskelle, Joseph M. DeBonis, Joshua M. Kerwin, Chris R. LaTourette, James M. Pauve, William J. Potts

2016-2017: Victor M. Esposito, Patrick O. O'Brien, Ryan P. Kremler, Kyle P. Steubing, Jhoan C. Avila

2015-2016: Parker Beckett, Brandon Pereyra, Kai Sen Lathrop, Allen He, Joseph Karp

PROFESSIONAL ACTIVITIES

Leadership

Professional Organizations

Associate Editor, *Frontiers in Soft Matter*, 04/2023-present

Academic Editor, *PLOS ONE*, 07/2022-present

Conferences

Organizing committee member, *66th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Pittsburgh, PA, 11/2013.

Focused session organizer, "Biomembranes," *2025 APS Global Physics Summit*, Anaheim, CA, 03/2023.

Symposium organizer, "Surface, Interface, and Coating Materials," *ACS Fall 2023 National Meeting*, San Francisco, CA, 08/2023.

Symposium organizer, "Nanoscale interaction and biosensing," *ACS Northeastern Region Meeting 2022*, Rochester, MA, 10/2022.

Symposium organizer, "Surface, Interface, and Coating Materials (Virtual)," *ACS Fall 2021 National Meeting & Expo*, Atlanta, GA, 08/2021.

Symposium organizer, "Surface, Interface, and Coating Materials," *ACS Fall 2020 National Meeting & Expo*, San Francisco, CA, 08/2020.

Symposium organizer, "Surface, Interface, & Coating Materials," *256th ACS National Meeting & Exposition*, Boston, MA, 06/2018.

Symposium organizer, "Self-Assembly of Nanoparticles in Drying Liquid: Beyond 'Coffee-Ring'," "Mechanics and Physics of Soft Materials – Instability and Manufacturing of Soft Materials," *18th U.S. National Congress for Theoretical and Applied Mechanics*, Chicago, IL, 06/2018.

Session chair, "Particle Laden," *76th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Washington, DC, 11/2023.

Session chair, "Friction, Fracture, and Adhesion in Soft Materials I," *APS March Meeting 2023*, Las Vegas, NV, 03/2023.

Session chair, "Biofluids: Red Blood Cell Dynamics and Clotting," *68th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Boston, MA, 11/2015.

Session chair, "Microscale Flows: Interfaces and Wetting," *67th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, San Francisco, CA, 11/2014.

Session chair, "Drops XV: Superhydrophobic Surfaces," *66th Annual Meeting of the American Physical Society's Division of Fluid Dynamics*, Pittsburgh, PA, 11/2013.

Other Service

Journal Reviewer

>70 journals, including *ACS Applied Materials and Interfaces*, *ACS Macro Letters*, *ACS Nano*, *Advanced Science*, *Applied Physics Letters*, *Chemical Communications*, *Environmental Science: Nano*, *JACS Au*, *Journal of Applied Physics*, *Journal of Chemical Physics*, *Journal of Physical Chemistry Letters*, *Journal of Fluid Mechanics*, *Lab on a Chip*, *Langmuir*, *Macromolecules*, *Materials Horizons*, *Nano Letters*, *Nanoscale*, *Physical Chemistry Chemical Physics*, *Physical Review Applied*, *Physical Review E*, *Physical Review Letters*, *Physics of Fluids*, *Proceedings of the National Academy of Sciences*, *Science Advances*, *Scientific Reports*, *Soft Matter*, *Small*

PhD Thesis Reviewer

Indian Institute of Technology Madras

Proposal Panel and Ad Hoc Reviewer

SUNY Research Seed Grant Program: 04/2024

U.S. National Aeronautics and Space Administration: *Future Investigators in Earth and Space Science and Technology*, 04/2024

U.S. National Science Foundation: *Condensed Matter and Materials Theory*, 2022, 2023

U.S. National Institutes of Health: Special Emphasis Panel ZRG1 F04B - S (20) for *Fellowships: Chemistry, Biochemistry, and Biophysics B*, 11/2022

U.S. Army Research Office: *Materials Design*, 04/2021

U.S. National Science Foundation: *Advanced Manufacturing*, 2020

French National Research Agency: *Infectious Diseases and Environment*, 11/2019

National Fund for Scientific and Technological Development of Chile: *Chemistry 1*, 09/2019

ACS Petroleum Research Fund: 01/2016, 01/2017, 02/2019

Natural Sciences and Engineering Research Council of Canada: *Chemistry Discovery Grant*, 11/2017, 11/2018

U.S. Department of Agriculture: *SBIR: Biofuels and Biobased Products*, 05/2018

U.S. National Science Foundation: *Computational and Data-Enabled Science and Engineering*, 2017

U.S. National Science Foundation: *Mechanics of Materials and Structures*, 2017

Membership in Professional Societies

American Physical Society, Member, 12/2010-present

American Chemical Society, Member, 07/2018-present

Biophysical Society, Member, 9/28/2017-present

UNIVERSITY SERVICE

Department Committees*Binghamton University*

Director of Undergraduate Studies and Chair, Undergraduate Studies Committee, 2023-2024
Member, Undergraduate Studies Committee, 2020-2024
Member, Graduate Studies Committee, 2015-2020
Member, Faculty Search Committee, 2021-2024
Member, Seminar Committee, 2014-2024
Member, MSE Application Review Committee, 2019-2024

School and College Committees*Binghamton University*

Member, Watson Undergraduate Studies Committee, 2023-2024
Member, Watson Research Advisory Committee, 2022-2023
Member, Watson High-Performance Research Computing Committee, 2022-2023
Member, Watson Communications & Marketing Committee, 2016-2018

University Committees*Binghamton University*

Member, Smart Energy TAE Steering Committee, 2015-2016

TEACHING

Undergraduate Courses*Binghamton University*

ME 302 - Engineering Analysis (ME 302)
Fall 2015, Fall 2016, Fall 2018, Fall 2022, Fall 2023

Graduate Courses*University at Buffalo*

MAE 509 - Special Topics
Fall 2024

Binghamton University

ME 541 - Computational Heat Transfer
Spring 2016, Spring 2017
ME 541 - Computational Fluid Dynamics
Spring 2020, Spring 2021, Spring 2022
ME 641 - Mesoscale Modeling of Complex Fluids
Spring 2015, Fall 2017

ME 535 - Analytical Methods I

Fall 2014, Fall 2017, Fall 2018, Fall 2021

ME 540 - Transport Phenomena I

Spring 2017, Spring 2018

ME 540 - Fundamentals of Energy Transport

Spring 2020, Spring 2021, Spring 2022, Spring 2023, Spring 2024

ME 533 - Applied Mathematical Methods

Fall 2019, Fall 2020, Fall 2022