Lilian C. Hsiao

University Faculty Scholar & Associate Professor
Dept. of Chemical and Biomolecular Engineering, North Carolina State University
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EDUCATION

University of Michigan, Chemical Engineering	Ph.D. (2014)
University of Wisconsin-Madison, Chemical Engineering	B.S. (2008)

PROFESSIONAL EXPERIENCE

Associate Professor, NC State University	
Department of Chemical & Biomolecular Engineering	2023 −
Department of Mechanical & Aerospace Engineering	2026 −
Assistant Professor, NC State University	
Department of Chemical & Biomolecular Engineering	2016 − 2023
Summer Faculty Fellow, Air Force Research Laboratory	2024
Visiting Associate Professor, Chemical Engineering, Stanford University	2024
Co-Founder, X-MED Hydrogels	2020 − 2024
Postdoctoral Scholar, Chemical Engineering, Massachusetts Institute of Technology	2014 − 2016

AWARDS & HONORS

Field & national awards

American Physical Society DSOFT Early Career Award	2025
Society of Rheology Metzner Award	2024
International Society of Coating Sci & Tech. Scriven Young Investigator Award	2024
Camille Dreyfus Teacher-Scholar Award	2022
Sloan Research Fellowship	2022
American Chemical Society Unilever Award	2021
National Science Foundation CAREER Award	2021
AAAS Marion Milligan Mason Award	2019

Other awards

US National Committee on Theoretical and Applied Mechanics (USNC/TAM) Young Observer	2026
University Faculty Scholar, NC State	2025
Air Force Summer Faculty Fellowship	2024
Goodnight Early Career Innovators Award, NC State	2022
Faculty Research and Professional Development Fund, NC State	2018
MIT Chemical Engineering Individual Accomplishment Award	2016
Rackham Predoctoral Fellowship, University of Michigan	2013
Rackham Graduate Student Research Grant, University of Michigan	2013
AIChE Fluid Mechanics Division Poster Award	2012
Meyer Scholarship, University of Wisconsin	2005

Early career spotlight by peer-reviewed journals (*Journal of Physical Chemistry A/B/C in 2023, Soft Matter 2020, AIChE Journal 2019*)

PEER-REVIEWED ARTICLES (* = corresponding author)

49) C. Xu, Y. C. Saraswat, N. Shakoury & L. C. Hsiao*. Nonlinear viscoelasticity of composite hydrogels with colloidal fibrillar networks. *Under review*.

48) R. A. Waheibi, Y. Saraswat, R. Mereddy, C. Glover, D. Dixon, A. Langford & L. C. Hsiao*. Aqueous channel topology governs resuspension in aluminum phosphate colloidal formulations. *Under review*.

47) M. Sohail, H. Perera, R. A. Waheibi, K. Ernst, T. Cao, L. C. Hsiao* & S. A. Khan*. Confocal rheo-imaging of cellulose acetate stabilized Pickering emulsions. *Under review*.

46) O. Ojuade, H. Dong, Y. C. Saraswat, A. Jagota & L. C. Hsiao*. Particle entrainment in lubricants leads to extended mixed lubrication in soft tribology. *Under review*.

45) P. K. Jani, A. O' Brien, D. Malusare, L. C. Hsiao & S. A. Khan. Adsorption and wettability effects of self-assembled amphiphiles on polypropylene films and nonwoven fabrics. *Accepted*, **Journal of Colloid and Interface Science**.

44) L. M. Carvajal, J. Fernandez, A. Akbari, D. Shukla, L. C. Hsiao, Y. Zhu, J. Pawlak & R. Venditti. End-of-life biodegradation and enzymatic hydrolysis kinetics of regenerated cellulose soft electronics: influence of silver nanowires, silver ions, and substrate composition. *Accepted,* **Journal of Cleaner Production**.

43) B. E. Uzunoglu, O. Ojuade, M. Aleem, R. Kaveti, K. Kathpalia, B. Sahin, V. Misra, L. C. Hsiao* & A. J. Bandodkar*. Multimodal wearable sensors that communicate via tactile signals for human and robotic applications. *In Press,* **Device**.

42) R. E. Dowdy-Green, R. A. Waheibi, N. Shakoury, Y. Ye & L. C. Hsiao*. Colloidal heterostructures enable interfacial transport of immiscible molecules in printable organohydrogels. **Advanced Materials**, e13787 (2026).

41) P. K. Jani, S. A. Nadkarni, K. J. Ernst, B. V. Farias, C. G. Hincher, O. A. Ojuade, Y. C. Saraswat, P. Sarker, D. O. Freytes, L. C. Hsiao* & S. A. Khan*. Nanodiamond-infused hydrogels for pH-tunable rheology, lubrication and UV protection. **Advanced Functional Materials**, 35(46), e04604 (2025).

40) Y. C. Saraswat, R. A. Waheibi, R. V. Mereddy, C. Glover, D. Dixon, A. Langford & L. C. Hsiao*. Colloidal packing fraction in sedimented aluminum adjuvants dictate their resuspension rheology. **Journal of Pharmaceutical Sciences** 114(10), 103957 (2025).

39) P. K. Jani, K. Yadav, M. Derkaloustian, H. Koerner, C. Dhong, S. A. Khan* & L. C. Hsiao*. Self-assembled amphiphiles for haptically distinct energy harvesters. **Science Advances** 11, eadr4088 (2025).

- *Featured in Tribology and Lubrication Technology Magazine, May 2025: "Role of friction in developing wearable fabrics that generate electricity"*
- *Featured in Just Curious, February 2025: " How does clothing generate electricity? One day, will our pants recharge our cell phones?"*

38) L. M. Carvajal, D. Shukla, H. Sadeghifar, L. C. Hsiao, Y. Zhu & R. Venditti. Sustainable soft electronics with biodegradable cellulose films and printed recyclable silver nanowires. **Advanced Sustainable Systems**, 2400713 (2025).

37) R. A. Waheibi & L. C. Hsiao*. Pairing-specific microstructure in depletion gels of bidisperse colloids. **Soft Matter** 20, 9083-9094 (2024).

36) P. K. Jani, B. Farias, R. Jain, K. Houston, O. D. Velev, E. E. Santiso, L. C. Hsiao & S. A. Khan. Isothermal titration calorimetry reveals entropy driven bisphenol A epoxy resin adhesion to metal oxide surfaces. **Macromolecules** 57(5), 2130-2141 (2024).

35) Y. C. Saraswat, E. A. Kerstein & L. C. Hsiao*. Creep and recovery in dense suspensions of smooth and rough colloids. **Journal of Rheology** 68(2), 205-217 (2024). *Feature Article.*

34) M. Nabizadeh, F. Nasirian, X. Li, Y. C. Saraswat, R. Waheibi, L. C. Hsiao, D. Bi, B. Ravandi & S. Jamali. Network physics of attractive colloidal gels: resilience, rigidity, and phase diagram. **Proceedings of the National Academy of Sciences USA** 121(3), e2316394121 (2024).

33) P. Sarker, P. Jani, L. C. Hsiao, O. Rojas & S. A. Khan. Interacting collagen and tannic acid particles: uncovering pH-dependent rheological and thermodynamic behaviors. **Journal of Colloid & Interface** Science 650, 541-552 (2023).

32) Y. Kotb, C. M. Serfass, A. Cagnard, K. R. Houston, S. A. Khan, L. C. Hsiao & O. D. Velev. Molecular structure effects on the mechanisms of corrosion protection of model epoxy coatings on metals. **Materials Chemistry Frontiers** 7, 274-286 (2023).

31) Z. Farrell, A. Jacob, V. Truong, A. Elbourne, W. Kong, L. C. Hsiao, M. D. Dickey & C. Tabor. Compositional design of surface oxides in gallium-indium alloys. **Chemistry of Materials** 35(3), 964-975 (2023).

30) S. Pradeep, A. Wessel & L. C. Hsiao*. Hydrodynamic origin for the suspension viscoelasticity of rough colloids. **Journal of Rheology** 66(5), 895 (2022). *Feature Article.*

29) C. M. Serfass, Y. Kotb, K. M. Smith, K. R. Houston, S. A. Khan, O. D. Velev & L. C. Hsiao*. Microstructural visualization of coating-metal systems undergoing corrosion in acidic environments. **ACS Applied Polymer Materials** 4, 3196 (2022).

28) Y. Ko, V. K. Truong, S. Y. Woo, M. D. Dickey, L. C. Hsiao & J. Genzer. Counter-propagating gradients of antibacterial and antifouling polymer brushes. **Biomacromolecules** 23, 424 (2022).

27) Y. Kotb, A. Cagnard, K. R. Houston, S. A. Khan, L. C. Hsiao & O. D. Velev. What makes epoxy-phenolic coatings on metals ubiquitous: surface energetics and molecular adhesion characteristics. **Journal of Colloid and Interface Science** 608, 634 (2022).

26) S. Pradeep, M. Nabizadeh, A. R. Jacob, S. Jamali & L. C. Hsiao*. Jamming distance dictates colloidal shear thickening. **Physical Review Letters** 127(15), 158002 (2021).

25) P. Adhikari, P. K. Jani, L. C. Hsiao, O. J. Rojas & S. A. Khan. Interfacial contributions in nanodiamond-reinforced polymeric fibers. **Journal of Physical Chemistry B** 125, 10312 (2021).

24) K. M. Smith & L. C. Hsiao*. Migration and morphology of colloidal gel clusters in cylindrical channel flow. **Langmuir** 33, 033113 (2021).

23) D. Z. Rocklin, L. C. Hsiao, M. E. Szakasits, M. J. Solomon & X. Mao. Elasticity of colloidal gels: structural heterogeneity, floppy modes, and rigidity. **Soft Matter** 17, 6929 (2021).

22) A. H. Williams, S. Roh, A. R. Jacob, S. D. Stoyanov, L. C. Hsiao & O. D. Velev. Printable self-reinforced homocomposite hydrogels with a molecular-colloidal double network. **Nature Communications** 12, 2834 (2021).

21) Y. Peng, C. M. Serfass, A. Kawazoe, Y. Shao, K. Gutierrez, C. Hill, V. Santos, Y. Visell & L. C. Hsiao*. Elastohydrodynamic lubrication of robotic and human fingertips on soft micropatterned substrates. **Nature Materials** 20, 1707-1711 (2021).
    - *Perspective in Tech Beat Column, Society of Tribology and Lubrication Engineers (STLE) Magazine, August 2021 issue.*

20) Y. Peng, C. M. Serfass, C. N. Hill & L. C. Hsiao*. Bending of soft micropatterns in elastohydrodynamic lubrication tribology. **Journal of Experimental Mechanics** 61, 969 (2021).

19) K. M. Smith, A. San-Miguel & L. C. Hsiao*. Local velocity of thermoresponsive colloidal gels in rate-driven flow. **Physics of Fluids** 33, 033113 (2021). *Editor's Pick.*

18) M. Gao, A. Krissanaprasit, A. Miles, L. C. Hsiao & T. LaBean. Mechanical and electrical properties of DNA hydrogel-based composites containing self-assembled three-dimensional nanocircuits. **Applied Sciences** 11, 2245 (2021).

17) S. Pradeep & L. C. Hsiao*. Contact criterion for suspensions of smooth and rough colloids. **Soft Matter** 16, 4890 (2020).

16) B. Farias, L. C. Hsiao & S. A. Khan. Rheological and tribological behavior of gels and emulsions containing polymer and phospholipid. **ACS Applied Polymer Materials** 2, 1623 (2020).

15) E. D. Cárdenas-Vásquez, K. M. Rafferty, T. J. Doolan & L. C. Hsiao*. Shear-induced microstructural gradients in nanoemulsion-laden organohydrogel fibers. **ACS Applied Polymer Materials** 2, 594 (2020). *Cover Art.*

14) L. E. Kass, E. D. Cárdenas-Vásquez & L. C. Hsiao*. Composite double network hydrogels with thermoresponsive nanoemulsions. **AIChE Journal** (Invited, Futures Series) 65, e16817 (2019).

13) A. R. Jacob, D. Parekh, M. D. Dickey & L. C. Hsiao*. Interfacial rheology of gallium-based liquid metals. **Langmuir** 35, 11774 (2019).

12) L. C. Hsiao* & S. Pradeep. Experimental synthesis and characterization of rough particles for colloidal and granular rheology. **Current Opinion in Colloid & Interface Science** 43, 94 (2019).

11) K. A. Whitaker, Z. Varga, L. C. Hsiao, M. J. Solomon, J. W. Swan & E. M. Furst. Colloidal gel elasticity arises from the packing of locally glassy clusters. **Nature Communications** 10, 2237 (2019).

10) L. C. Hsiao*, I. Saha Dalal, R. G. Larson & M. J. Solomon. Translational and rotational dynamics in dense suspensions of smooth and rough colloids. **Soft Matter** 13, 9229-9236 (2017).

9) L. C. Hsiao*, S. Jamali, E. Glynos, P.F. Green, R.G. Larson & M.J. Solomon. Rheological state diagrams for rough colloids in shear flow. **Physical Review Letters** 119, 158001 (2017).
   - *Featured in the NC State Engineering Magazine, Spring/Summer 2018 issue.*

8) L.-C. Cheng, L. C. Hsiao & P. S. Doyle. Multiple particle tracking study of thermally-gelling nanoemulsions. **Soft Matter** 13, 6606-6619 (2017).

7) L. C. Hsiao, A.Z.M. Badruddoza, L.-C. Cheng & P. S. Doyle. 3D printing of self-assembling thermoresponsive nanoemulsions into hierarchical mesostructured hydrogels. **Soft Matter** 13, 921-929 (2017).

6) L. C. Hsiao & P. S. Doyle. Celebrating Soft Matter's 10th Anniversary: Sequential phase transitions in thermoresponsive nanoemulsions. **Soft Matter** 11, 8426-8431 (2015).

5) L. C. Hsiao, B. A. Schultz, J. Glaser, M. Engel, M. E. Szakasits, S. C. Glotzer & M. J. Solomon. Metastable orientational order of colloidal discoids. **Nature Communications** 6, 8507 (2015).

4) L. C. Hsiao, H. Kang, K. H. Ahn & M. J. Solomon. Role of shear-induced dynamical heterogeneity in the nonlinear rheology of colloidal gels. **Soft Matter** 10, 9254-9259 (2014).

3) L. C. Hsiao, K. A. Whitaker, M. J. Solomon & E. M. Furst. A model colloidal gel for coordinated measurements of force, structure, and rheology. **Journal of Rheology** 58(5), 1485-1505 (2014).

2) L. C. Hsiao, R. S. Newman, S. C. Glotzer & M. J. Solomon. Role of isostaticity and load-bearing microstructure in the elasticity of yielded colloidal gels. **Proceedings of the National Academy of Sciences USA** 109(40), 16029-16034 (2012).

1) N. Ziebarth, P. Heideman, R. Shapiro, S. Stoddart, L. C. Hsiao, G. Stephenson, P. A. Milewski & A. Ives. Evolution of periodicity in periodical cicadas. **Ecology** 86(12), 3200-3211 (2005).

PATENTS

2) L. C. Hsiao. *Acoustic method for accelerating stability testing of liquid formulations*. Invention disclosure filing date: September 26, 2023. Pending.

1) L. C. Hsiao & K. M. Smith. *Organohydrogel fibers for simultaneous release control of hydrophilic and hydrophobic substances.* Non-provisional patent filing date: April 20, 2022. Patent No.: US 2022/0339315 A1.

INVITED PERSPECTIVES

1) K. M. Smith & L. C. Hsiao. The Formulator's Toolbox for Consumer Products. *Chemical Engineering Progress*, pp. 26-31 (July 2020 Issue).

INVITED PRESENTATIONS

Plenary lectures

5)	APS March Meeting, DSOFT Early Career Award Symposium	Mar 2025
4)	Society of Rheology Metzner Award Lecture	Oct 2024
3)	ACS Unilever Award Lecture, 95th ACS Colloid and Surface Science Symposium	Jun 2021
2)	ACS Fall National Meeting, San Diego, AAAS Mason Award Symposium	Aug 2019
1)	American Association for the Advancement of Science, Mason Award Ceremony	Dec 2018

Keynote lectures

29)	University of Osaka, Yukawa Institute for Theoretical Physics, Osaka, Japan	Dec 2026
28)	10th International Soft Matter Conference, BITS Pilani, Goa, India	May 2026
27)	LIV Winter Meeting on Statistical Physics, Tecnológico de Monterrey, Mexico	Jan 2026
26)	AIChE Annual Meeting, Invited Session on Coating Science and Technology	Nov 2025
25)	ACS Spring Meeting & Expo, Invited Keynote, Colloidal Metamaterials	Mar 2025
24)	ACS Spring Meeting & Expo, Invited Keynote, Colloidal Networks	Mar 2025
23)	California Institute of Technology, JFB Symposium	Oct 2024

22) Frontiers in Soft Matter and Macromolecular Networks — Oct 2024
21) Gordon Research Conference (Colloids) — Feb 2024
20) ACS Fall National Symposium, Colloidal Networks — Aug 2023
19) Gordon Research Conference (Adhesion) — Jul 2023
18) INTUITIVE Spring School on Mechanical Aspects of Haptic Interfaces, Malta — Apr 2023
17) Society of Rheology Invited Keynote, Rheology of Gels, Glasses & Jammed Systems — Nov 2022
16) European Colloid & Interface Society Conference, Tribological Effects on Rheology — Sep 2022
15) ACS Colloid and Surface Symposium Keynote, Aspects of Colloid & Interface Science — Jul 2022
14) Institut Systèmes Intelligents et de Robotique, Sorbonne University, Paris — Jun 2022
13) Laboratoire Physique et Mécanique des Milieux Hétérogènes, ESPCI, Paris — Jun 2022
12) ACS National Meeting, Colloidal Gels — Mar 2022
11) North Carolina State University, Textile Engineering, Tissue Engineering Seminar — Jan 2022
10) Gordon Research Conference, Science of Adhesion — Sep 2021
9) Argonne National Lab, Dynamics of Soft Matter with Emphasis on Complex Fluids — May 2021
8) APS March Meeting, DSOFT, "Rheology of Gels" Focus Session — Mar 2021
7) AIChE National Meeting, Orlando FL, AIChE Journal Futures Invited Talks — Nov 2019
6) Conference on Engineering Cosmetics and Consumer Products — Nov 2019
5) North Carolina State University, Physics, Complex Matter and Biophysics Seminar — Sep 2019
4) ECI Colloidal, Macromolecular and Biological Gels II Conference, Cork, Ireland — Jul 2019
3) Yale University, 4th Annual Packing Problems Conference — Jun 2019
2) Northeastern University, New England Complex Fluids Workshop — Mar 2019
1) Kyoto University, Yukawa Institute for Theoretical Physics, Kyoto, Japan — Jun 2018

Departmental seminars

41) University of Illinois-Chicago, Chemical Engineering, Dept. Seminar — Apr 2026
40) University of Massachusestts-Amherst, Chemical Engineering, Dept. Seminar — Sep 2025
39) University of Cincinnati, Chemical Engineering, Dept. Seminar — Jan 2025
38) University of California-Berkeley, Materials Science & Engineering, Dept. Seminar — Oct 2024
37) Case Western Reserve University, Macromolecular Science & Engineering — Jul 2024
36) Columbia University, Chemical Engineering, Dept. Seminar — Apr 2024
35) UNC Greensboro/NC A&T School of Nanoscience & Nanoengineering, Dept. Seminar — Apr 2024
34) Stanford University, Chemical Engineering, Dept. Seminar — Oct 2023
33) KU Leuven, Chemical Engineering, Dept. Seminar — Sep 2023
32) California Institute of Technology, Chemical Engineering, Dept. Seminar — Jan 2023
31) University of Wisconsin-Madison, Chemical Engineering, Dept. Seminar — Dec 2022
30) University of Michigan, Chemical Engineering, Dept. Seminar — Sep 2022
29) Lehigh University, Chemical and Biomolecular Engineering, Dept. Seminar — Sep 2022
28) Vanderbilt University, Chemical Engineering, Dept. Seminar — Sep 2022
27) ETH Zürich, Department of Materials, Dept. Seminar — Jun 2022
26) University of California-Riverside, Mechanical Engineering, Dept. Seminar — Jun 2022
25) Massachusetts Institute of Technology, Chemical Engineering, Dept. Seminar — Apr 2022
24) Virginia Tech, Biomedical Engineering and Mechanics, Dept. Seminar — Mar 2022
23) Princeton University, Chemical Engineering, Dept. Seminar — Oct 2021
22) Texas A&M University, Chemical Engineering, Dept. Seminar — Oct 2021
21) University of Texas-Austin, Chemical Engineering, Dept. Seminar — Sep 2021
20) University of Kentucky, Chemical & Materials Engineering, Dept. Seminar — Sep 2021
19) Oklahoma University, Chemical Engineering, Dept. Seminar — Mar 2021
18) Duke University, Materials Science & Engineering, Dept. Seminar — Feb 2021
17) University of Illinois-Urbana Champaign, Chemical Engineering, Dept. Seminar — Sep 2020
16) North Carolina State University, Materials Science and Engineering, Dept. Seminar — Jan 2019
15) Virginia Tech, Chemical Engineering, Graduate Student Research Symposium — Apr 2018
14) University of California-Irvine, Chemical Engineering, Dept. Seminar — Jun 2017
13) Hong Kong University of Science and Technology, Physics, Dept. Seminar — Jul 2016
12) North Carolina State University, Chemical Engineering, Dept. Seminar — Mar 2016
11) Yale University, Chemical Engineering, Dept. Seminar — Mar 2016
10) University of Houston, Chemical Engineering, Dept. Seminar — Mar 2016
9) University of Colorado-Boulder, Chemical Engineering, Dept. Seminar — Mar 2016

8) University of California-San Diego, NanoEngineering, Dept. Seminar Mar 2016
7) Georgia Institute of Technology, Chemical Engineering, Dept. Seminar Feb 2016
6) University of Delaware, Chemical Engineering, Dept. Seminar Feb 2016
5) Columbia University, Chemical Engineering, Dept. Seminar Feb 2016
4) University of Notre Dame, Chemical Engineering, Dept. Seminar Jan 2016
3) University of Florida, Chemical Engineering, Dept. Seminar Jan 2016
2) Princeton University, Chemical Engineering, Dept. Seminar Jan 2016
1) Rensselaer Polytechnic Institute, Chemical Engineering, Dept. Seminar Jan 2016

Industry seminars

9) Pfizer Pharmaceutical Research & Development Jan 2025
8) FMC Corporation Technology Forum, R&D Seminar Mar 2023
7) Dow Rheology Center of Excellence, R&D Seminar Mar 2023
6) Nike, Equipment Innovation & Test Lab, R&D Seminar May 2022
5) Unilever Research & Development Seminar Jun 2021
4) 3M Research & Development Seminar Feb 2021
3) Cabot Corporation, Division of Inkjet Printing May 2020
2) Proctor & Gamble, Research & Development, Cinncinati OH Mar 2017
1) Cabot Corporation, Business & Technology Center, Billerica MA Mar 2017

Workshop lectures and various speaker roles

16) Gordon Research Conference (Colloids), Discussion Leader Feb 2026
15) University of Michigan, NSF Center for Complex Particle Systems May 2025
14) Air Force Research Laboratory, Materials and Manufacturing Directorate Jul 2024
13) University of the Aegean, RheoSamos Summer School on Rheology Jul 2024
12) Stanford Polymer Collective Seminar Mar 2024
11) Gordon Research Conference (Colloids), Discussion Leader Nov 2022
10) Army Research Office Workshop at Ohio State University, Mechanics Division May 2022
9) North Carolina State University, Staudinger's Legacy in Polymers Seminar Dec 2020
8) Journal of Rheology, Physics of Dense Suspensions Workshop Jul 2020
7) American Physical Society, GSOFT Short Course, Boston MA Mar 2019
6) University of California-Santa Barbara, Kavli Institute of Theoretical Physics Workshop Jan 2018
5) École normale supérieure de Lyon, CECAM Gel Workshop, Lyon, France Jun 2017
4) University of North Carolina-Chapel Hill, Triangle Soft Matter Workshop May 2017
3) Duke University, Center for Nonlinear and Complex Systems Sep 2016
2) Georgetown University, Workshop on Rheology of Dense Particulate Suspensions Jun 2016
1) University of Delaware, Center for Molecular & Engineering Thermodynamics Feb 2013

PROFESSIONAL SERVICE & LEADERSHIP

Leadership and advisory roles

Chair, ACS LaMer Award Committee 2025 −
Early Career Advisory Board Member, Langmuir 2025 − 2027
Member-At-Large, APS DSOFT 2024 − 2027
Technical Program Chair, Society of Rheology 96th Annual Meeting 2024 − 2025
Meeting Program Chair, AIChE Area 1J Fluid Mechanics 2023 − 2024
Organizing Committee of the 2024 Soft Matter of the Americas Conference (SMAC) 2023 − 2024
Board of Directors, Polymers Center of Excellence 2022 −
Membership Chair, APS Division of Soft Matter (DSOFT) 2019 − 2023
Local Arrangements Chair, 2022 ACS Colloids and Surface Science Symposium 2019 − 2023
Local Arrangements Co-chair, 2019 Society of Rheology Annual Meeting 2016 − 2019
President of the MIT Postdoctoral Association (MIT) 2015 − 2016
Founder of the Postdoctoral Organization for Women Engaged in Research (MIT) 2015 − 2016

Committee memberships and other service

Member, APS DSOFT Early Career Award Selection Committee 2025 − 2026
Chair, APS Gallery of Soft Matter Selection Committee 2026
Fundraising Committee Member, APS Division of Soft Matter (DSOFT) 2022 − 2024

Committee Member, Society of Rheology's Diversity, Equity, and Inclusion Committee	2019 − 2024
Planning Committee, AIChE Area 1J Fluid Mechanics	2019 − 2029
Member of APS Wiki Scientists, *Biographies of Women and Minority Physicists*	2020
Program Committee, APS Topical Group on Soft Matter (GSOFT)	2019
Technical session chairs for AIChE, SOR, APS, ACS meetings	2017 − 2021
AIChE RAPID Roadmapping Committee	2017
Panel service to NSF CBET, CMMI, and DMR divisions	2016 − 2019

SERVICE AT NC STATE

Chair, Future Leaders in Chemical Engineering Symposium at NC State	2022, 2026
Member, Graduate Admissions Recruiting Committee (CBE)	2025 −
Member, Faculty Search Committee (CBE)	2025
Member, Departmental Head Review Committee (CBE)	2025
Chair, Faculty Search Committee (CBE)	2024
Co-chair, Graduate Admissions Recruiting Committee (CBE)	2022 − 2023
Member, Carbon Cluster Search Committee	2022 − 2023
Member, Faculty Search Committee (CBE)	2022
Departmental seminar organizer (CBE)	2021 − 2022
Member, Graduate Admissions Recruiting Committee (CBE)	2019 − 2022, 2025
Co-organizer, Triangle Soft Matter Workshop at NC State	2018, 2021
Member, Recognition Committee (CBE)	2017 − 2018
Judge, Schoenborn Symposium (CBE)	2016

HSIAO GROUP AWARDS

- K. Yadav, 1st Prize, Electrostatic Society of America, 2026.
- C. Weeks, 2nd Place Poster Award, NCSU Graduate School Symposium, 2026.
- C. Weeks & S. Park, Poster Awards, NCSU Schoenborn Symposium, 2025.
- Y. Saraswat, Best PhD student Poster Award, Area 1J AIChE meeting, 2024.
- P. Jani. Nonwovens Institute Best Overall Award, 2021, 2022, 2023.
- S. Pradeep. Society of Rheology Poster Award (3rd place), Society of Rheology Annual Meeting, 2022.
- S. Pradeep. James K. Ferrell Award for Outstanding PhD graduate, NC State Chemical Engineering, 2022.
- S. Pradeep. Finalist for the Langmuir Graduate Student Oral Presentation Award. 95th ACS Colloid & Surface Symposium, 2021.
- K. M. Smith. Winner of the Arts-in-Science competition (2nd place). Triangle Soft Matter workshop, 2021.
- P. Thacker. 2020 Future Leaders in Chemical Engineering national awards seminar for outstanding undergraduate researchers. Winner of the Best Poster award, October 2020.
- A. R. Jacob. Winner of the Gallery of Rheology (1st Place). Society of Rheology Annual Meeting, 2018. Cover of *Rheology Bulletin* 88 (1), January 2019.

CONTRIBUTED PRESENTATIONS (Incl. multiple student and postdoctoral presentations)

- Electrostatic Society of America Annual Meeting, Cocoa Beach FL, June 2026.
- AIChE Annual Meeting, Boston MA, November 2025.
- Society of Rheology Annual Meeting, Santa Fe NM, October 2025.
- ACS Spring Meeing & Expo, San Diego CA, March 2025.
- AIChE Annual Meeting, San Diego CA, October 2024.
- Society of Rheology Annual Meeting, Austin TX, October 2024.
- International Society of Coating Science and Technology, Atlanta GA, September 2024.
- APS March Meeting, Minneapolish MN, March 2024.
- AIChE Annual Meeting, Orlando FL, November 2023.
- International Congress on Rheology, Athens, Greece, August 2023.
- ACS Colloid & Surface Science Symposium, Raleigh NC, June 2023.
- AIChE Annual Meeting, Phoenix AZ, November 2022.
- Society of Rheology, Chicago IL, October 2022.

- ACS Colloid & Surface Science Symposium, Golden CO, July 2022.
- Society of Tribologists and Lubrication Engineers Annual Meeting, Orlando FL, May 2022.
- AIChE Annual Meeting, Boston MA, November 2021.
- Society of Rheology Annual Meeting, Bangor ME, October 2021.
- ACS Colloid & Surface Science Symposium, Virtual, June 2021.
- APS March Meeting, Virtual, March 2021.
- International Congress on Rheology, Virtual, December 2020.
- APS Division of Fluid Dynamics Annual Meeting, Virtual, November 2020.
- AIChE Annual Meeting, Virtual, November 2020.
- Gordon Research Conference, Ventura CA, February 2020.
- APS Division of Fluid Dynamics Annual Meeting, Seattle WA, USA, November 2019.
- Society of Rheology Annual Meeting, Raleigh NC, USA, October 2019.
- APS March Meeting, Boston MA, USA, March 2019.
- AIChE Annual Meeting, Pittsburgh PA, USA, November 2018.
- ACS Colloid & Surface Science Symposium, New York NY, USA, June 2017.
- AIChE Annual Meeting, San Francisco CA, USA, November 2016.
- ACS Colloid & Surface Science Symposium, Cambridge MA, USA, June 2016.
- AIChE Annual Meeting, Salt Lake City UT, USA, November 2015.
- ACS Colloid & Surface Science Symposium, Pittsburgh PA, USA, June 2015.
- AIChE Annual Meeting, Atlanta GA, USA, November 2014.
- APS March Meeting, Denver CO, USA, March 2014.
- AIChE Annual Meeting, San Francisco CA, USA, November 2013.
- AIChE Annual Meeting, Pittsburgh PA, USA, November 2012.
- International Congress on Rheology (ICR), Lisbon, Portugal, August 2012.
- APS March Meeting, Boston MA, USA, March 2012.
- Society of Rheology Annual Meeting, Cleveland OH, USA, October 2011.
- AIChE Annual Meeting, Salt Lake City UT, USA, November 2010.
- Society of Rheology Annual Meeting, Madison WI, USA, October 2009.

TEACHING

CHE 715: Graduate Transport Phenomena (52 students), NCSU, Spring 2026.
CHE 312: Transport Processes II (55 students), NCSU, Fall 2025.
CHE 311: Transport Processes I (62 students), NCSU, Fall 2024.
CHE 312: Mass Transfer and Separations (38 students), NCSU, Fall 2023.
CHE 715: Graduate Transport Phenomena (47 students), NCSU, Spring 2023.
CHE 395: Professional Development Seminar (72 students), NCSU, Fall 2022.
CHE 312H: Mass Transfer and Separations Honors (27 students), NCSU, Spring 2022.
CHE 395: Professional Development Seminar (74 students), NCSU, Fall 2021.
CHE 312H: Mass Transfer and Separations Honors (40 students), NCSU, Spring 2021.
CHE 205: Chemical Process Principles (45 students), NCSU, Fall 2020.
CHE 312H: Mass Transfer and Separations Honors (16 students), NCSU, Spring 2020.
CHE 596: Soft Matter Mechanics (18 students), NCSU, Fall 2019.
CHE 312H: Mass Transfer and Separations Honors (10 students), NCSU, Spring 2019.
CHE 205: Chemical Process Principles (75 students), NCSU, Fall 2018.
CHE 312: Mass Transfer and Separations (34 students), NCSU, Spring 2018.
CHE 205: Chemical Process Principles (67 students), NCSU, Fall 2017.
CHE 205: Chemical Process Principles (40 students), NCSU, Fall 2016.
CHE 230: Material and Energy Balances (200 students), University of Michigan, Fall 2012.

MENTORING

Postdoctoral Scholars
1) Chenxian Xu, Chemical Engineering, NCSU, 2024 − present.
2) Alan Jacob, Chemical Engineering, NCSU, 2017 − 2020. (Current employment: Assistant Professor, Chemical Engineering, IIT Hyderabad).

Doctoral Students

1) Nafisa Nawar, Ph.D. Chemical Engineering, NCSU, 2025 − present.
2) Abhinav Sati (co-advised with R. Farer), Ph.D. Chemical Engineering, NCSU, 2025 − present.
3) Seonghyeon Park (co-advised with O. Velev, S. Khan), Ph.D. Chemical Engineering, NCSU, 2024 − present.
4) Nazanin Shakoury, Ph.D. Chemical Engineering, NCSU, 2023 − present.
5) Kushal Yadav, Ph.D. Chemical Engineering, NCSU, 2023 − present.
6) Shourie Yerabati, Ph.D. Chemical Engineering, NCSU, 2023 − present.
7) Luz Meza Carvajal (co-advised with R. Venditti), Ph.D. Forest Biomaterials & Chemical Engineering, 2022 − present.
8) Oluwatobi Ojuade, Ph.D. Chemical Engineering, 2022 − present.
9) Pedro Henrique Wink Reis (co-advised with O. Velev), Ph.D. Chemical Engineering, 2022 − present.
10) Cormak Weeks, Ph.D. Chemical Engineering, 2022 − present.
11) Riley Dowdy-Green, Ph.D. Chemical Engineering, 2021 − present.
12) Rony Waheibi, Ph.D. Chemical Engineering, 2021 − 2026.
    Thesis: Structure-property relations of attractive colloidal gels *via* rheology and microscopy
13) Yug Saraswat, Ph.D. Chemical Engineering, 2020 − 2025.
    Thesis: Rheology of suspensions, flocculated networks and composite hydrogels
14) Pallav Jani (co-advised with S. Khan), Ph.D. Chemical Engineering, 2018 − 2024. (Current employment: TE Connectivity)
    Thesis: Adsorption, friction and reinforcement mechanisms at functional polymer interfaces
15) Kristine Smith, Ph.D. Chemical Engineering, 2018 − 2021. (Current employment: Bristol-Myers-Squibb)
    Thesis: Velocity profiles and microstructure of thermoresponsive nanoemulsions in cylindrical channel flow
16) Christopher Serfass, Ph.D. Chemical Engineering, 2017 − 2022, Honorary degree.
17) Shravan Pradeep, Ph.D. Chemical Engineering, 2016 − 2021. (Current employment: Assistant Professor, Okinawa Institute of Science and Technology)
    Thesis: Flow mechanics in dense suspensions of smooth and rough colloids
18) Yunhu Peng, Ph.D. Chemical Engineering, 2016 − 2021. (Current employment: Eli Lilly)
    Thesis: Elastohydrodynamic friction on soft substrates through surface patterning and porous microstructures

Masters Students
1) Taylor Hokanson, M.S. Chemical Engineering (thesis), NCSU, 2025 − present.
2) Raghu Mereddy, M.S. Chemical Engineering, NCSU, 2025 − 2026.
3) Casey Chason (co-advised with O. Velev), M. S. Biomedical Engineering, NCSU, 2025 − 2026.
4) Mustaq Shaik, M. S. Computer Science & Engineering, NCSU, 2024 − 2025.
5) Ashika Verma, M. S. Chemical Engineering, NCSU, 2023 − 2024.
6) Shivani Sutrave, M.S. Chemical Engineering, NCSU, 2022 − 2023.
7) Henry Ho, M.S. Chemical Engineering, NCSU, 2020 − 2021.
8) Elizabeth Cass, M.S. Chemical Engineering, NCSU, 2018 − 2019.

Undergraduate student researchers
1) Molly Koonce, Biology, NCSU, 2026 − present.
2) Karleigh Butterworth, Mechanical Engineering, NCSU, 2025 − present.
3) Richard Nguyen, Chemical Engineering, NCSU, 2025 − 2026.
4) Mina Azhar, Chemical Engineering, NCSU, 2026.
5) Ryan DeLo, Chemical Engineering, NCSU, 2025.
6) Hayden Getbehead, Chemical Engineering, NCSU, 2025.
7) Madi Alderete, Chemical Engineering, NCSU, 2025.
8) Ethan Dennis, Chemical Engineering, NCSU, 2025 − 2026.
9) Mirella Ramirez, Chemical Engineering, NCSU, 2025.
10) Noelle Sitaram, Chemical Engineering, NCSU, 2024 − 2026.
11) Tammy Cao, Chemical Engineering, NCSU, 2024 − 2025.
12) Raghu Mereddy, Chemical Engineering, NCSU, 2024 − 2025.
13) John Beyer, Chemical Engineering, NCSU, 2024.
14) Abbie Seidle, Chemical Engineering, NCSU, 2024.
15) Eli Kerstein, Chemical Engineering, NCSU, 2021 − 2024.

16) Hayden Ni, Chemical Engineering, NCSU, 2023.
17) Amory Gaylord, Computer Science & Engineering, NCSU, 2023.
18) Tim Fortunato, Chemical Engineering, NCSU, 2022 − 2023.
19) Isabella Miller, Chemical Engineering, NCSU, 2022.
20) Qiang Wang, GEARS program student, Polymer Materials & Engineering, Tsinghua University, 2022.
21) Runyu Qi, GEARS program student, Materials Science & Engineering, Tsinghua University, 2022.
22) Yuyan Su, GEARS program student, Pharmacy Engineering, Zhejiang University, 2022.
23) Jacob Kennedy, Chemical Engineering, NCSU, 2022. (Ph.D. program, University of Virgina, Chemical Engineering).
24) Catherine Hill, Chemical Engineering, NCSU, 2018 − 2022.
25) Pranav Thacker, Chemical Engineering, NCSU, 2020 − 2021. (Ph.D. program, UT-Austin, Chemical Engineering).
26) Alan Wessel, Chemical Engineering, NCSU, 2020 − 2021.
27) Hunter Ryno, Chemical Engineering, NCSU, 2019.
28) Christine Dang, Chemical Engineering, NCSU, 2019.
29) Bailey Henkel, Chemical Engineering, NCSU, 2019.
30) Sarah Monte, Chemical Engineering, NCSU, 2019.
31) Emily Roe, Materials Science and Engineering, NCSU, 2018 − 2019. (Ph.D. program, Duke University Biomedical Engineering).
32) Lauren Kass, Chemical Engineering, NCSU, 2017 − 2020. (Ph.D. program, UNC Chapel Hill, Pharmacoengineering).
33) Frank Wang, Chemical Engineering, NCSU, 2018 − 2019.
34) Taylor Doolan, Chemical Engineering, NCSU, 2018.
35) Katherine Tchinnis, Textiles Engineering, NCSU, 2017 − 2018.
36) Alex Kramer, Chemical Engineering, NCSU, 2017 − 2019.
37) Colin Donaldson, Chemical Engineering, NCSU, 2018 − 2019.
38) Joseph Holder, Chemical Engineering, NCSU, 2018.
39) Fang Yu, GEARS program student, Chemical Engineering, Zhejiang University, 2017.
40) Mark Gallo, Chemical Engineering, NCSU, 2017.
41) Rachel Williams, Chemical Engineering, NCSU, 2016 − 2017.
42) Elizabeth Pelt, Chemical Engineering, NCSU, 2016 − 2017.