RYAN POLING-SKUTVIK

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RESEARCH EXPERIENCE

2020–Now **Assistant Professor**, University of Rhode Island, Kingston RI
Department of Chemical Engineering
2018–2020 **Postdoctoral Researcher**, University of Pennsylvania, Philadelphia, PA
Department of Chemical and Biomolecular Engineering with Chinedum Osuji
2013–2018 **Graduate Research Assistant**, University of Houston, Houston, TX
Department of Chemical and Biomolecular Engineering with Jacinta C. Conrad and Ramanan Krishnamoorti

EDUCATION

2013–2018 **Ph.D. Chemical Engineering**
University of Houston **Houston, TX**
2009–2013 **B.E. Chemical Engineering**
The Cooper Union for the Advancement of Science and Art **New York, NY**

PEER-REVIEWED PUBLICATIONS

* denotes equal contribution, † denotes corresponding author, # indicates graduate student advisee, ‡ indicates undergraduate student advisee

Articles with URI Affiliation:

2024
1. Kumar, R.†; Slim, A. H.; Faraone, A.; Carrillo, J.-M. Y.; Poling-Skutvik, R.; Muthukumar, M.; Marciel, A. B.; Conrad, J. C.† Pivotal Roles of Triple Screening – Topological, Electrostatic, and Hydrodynamic – on Dynamics in Semi-Dilute Polyelectrolyte Solutions. *Macromolecules*. 2024. *57* (6), 2888-2896.
2. Keane, D.#; Mellor, M.‡; Constantine, C.‡; Poling-Skutvik, R.† Nanoparticle transport in biomimetic polymer-linked emulsions. *AIChE J*. 2024. *(70)*, e18307.
    - *Featured in CEP Magazine* (link)
    - *Featured on* AIChE J *Cover* (link)

2023
3. Kotkar, S. B.; Howard, M. P.; Nikoubashman, A.; Conrad, J. C.†; Poling-Skutvik, R. †; Palmer, J. C. † Confined Dynamics in Spherical Polymer Brushes. *ACS Macro Lett.* 2023. *(12)*, 1503-1509.
4. Nikoumanesh, E. #; Poling-Skutvik, R.† The Effect of Thixotropy on the Yield Transition in Reversible, Colloidal Gels. *J. Chem. Phys.* 2023. *159*, 044905.
    - *Featured in the Emerging Investigators Special Collection*
5. Keane, D.#; Mellor, M.‡; Constantine, C.‡; Poling-Skutvik, R.† Bridging Heterogeneity Dictates the Microstructure and Yielding Response of Polymer-Linked Emulsions. *Langmuir*. 2023. *39 (22)*, 7852-7862.

2022
6. Slim, A. H.; Shi, W. H.; Samghabadi, F. S.; Faraone, A.; Marciel, A. B.†; Poling-Skutvik, R.†; Conrad, J. C.† Electrostatic Repulsion Slows Relaxations of Polyelectrolytes in Semidilute Solutions. *ACS Macro Lett.* 2022. *11* (7), 854-860.
7. Rereddy, S. K.; Cao, A. C.†; Blackwell, B.; Poling-Skutvik, R.; Arratia, P. E.; Mirza, N. Rheology of Saliva in Health and Disease. *Biorheology*. 2022. *59 (1-2),* 19-27.
8. Keane, D. P.#; Mellor, M. D.‡; Poling-Skutvik, R.† Responsive Telechelic Block Copolymers for Enhancing the Elasticity of Nanoemulsions. *ACS Appl. Nano Mater.* 2022. *5* (5), 5934-5943.
    - *Featured in the ACS Applied Nano Materials Early Career Forum*

2021
9. Gabinet, U.R.; Lee, C.; Poling-Skutvik, R.; Keane, D.#; Kim, N. K.; Dong, R.; Vicars, Z.; Cai, Y.; Thosar, A. U.; Grun, A.; Thompson, S. M.; Patel, A. J.; Kagan, C. R.; Composto, R. J.; Osuji, C. O.† Nanocomposites of 2D-MoS_2 exfoliated in thermotropic liquid crystals. *ACS Mater. Lett.* 2021. *3* (6), 704–712.
10. Smith, M.; Poling-Skutvik, R.; Slim, A. H.; Willson, R. C.†; Conrad, J. C.† Dynamics of Flexible Viruses in Polymer Solutions. *Macromolecules*. 2021. *54* (10), 4557–4563.
11. Zhang, Y.; Dong, R.; Gabinet, U. R.; Poling-Skutvik, R.; Kim, N. K.; Lee, C.; Imran, O. Q.; Feng, X.; Osuji, C. O.† Rapid Fabrication by Lyotropic Self-Assembly of Thin Nanofiltration Membranes with Uniform 1 Nanometer Pores. *ACS Nano*. 2021. *15* (5), 8192–8203.
12. Chen, R.*; Kotkar, S. B.*; Poling-Skutvik, R.; Howard, M. P.; Nikoubashman, A.; Conrad, J. C.†; Palmer, J. C.† Nanoparticle dynamics in semidilute polymer solutions: rings versus linear chains. *J. Rheol.,* 2021. *65* (4), 745–755.

13. Dhand, A. P.; Poling-Skutvik, R.†; Osuji, C. O.† Simple production of cellulose nanofibril microcapsules and the rheology of their suspensions. *Soft Matter*. 2021. *17* (17), 4517–4524.
    - *Artwork featured on back cover* (link)

Articles with Prior Affiliations:

2020
14. Poling-Skutvik, R.; McEvoy, E.; Shenoy, V.; Osuji, C. O.† Yielding and bifurcated aging in nanofibrillar networks. *Phys. Rev. Mat.* 2020, *4* (10), 102601.
15. Slim, A. H.; Poling-Skutvik, R.; Conrad, J. C.† Local confinement controls diffusive nanoparticle dynamics in semidilute polyelectrolyte solutions. *Langmuir* 2020, *36* (31), 9153–9159.
16. Poling-Skutvik, R.*; Di, X.*; Osuji, C. O.† Correlation of droplet elasticity and volume fraction effects on emulsion dynamics. *Soft Matter.* 2020, *16* (10), 2574-2580.
17. Liu, J.*; Gao, Y.*; Wang, H.; Poling-Skutvik, R.; Osuji, C. O.; Yang, S.† Shaping and locomotion of soft robots using filament actuators made from liquid crystal elastomer-carbon nanotube composites. *Adv. Intell. Syst.* 2020, 1900163.
    - *Featured in Advanced Science News* (link)
    - *Artwork featured on back cover* (link)

2019
18. Roberts, R. C.; Poling-Skutvik, R.; Conrad, J. C.†; Palmer, J. C.† Tracer transport in attractive and repulsive supercooled liquids and glasses. *J. Chem. Phys.* 2019, *19*, 194501.
    - *Featured as Editor's Pick*
19. Poling-Skutvik, R.; Slim, A. H.; Narayanan, S.; Conrad, J. C.†; Krishnamoorti, R.† Soft interactions modify the diffusive dynamics of polymer-grafted nanoparticles in solutions of free polymer. *ACS Macro Lett.* 2019, *8*, 917-922.
    - *Artwork featured on cover* (link)
20. Poling-Skutvik, R.; Roberts, R. C.; Slim, A. H.; Narayanan, S.; Krishnamoorti, R.; Palmer, J. C.†; Conrad, J. C.† Structure dominates localization of tracers within aging nanoparticle glasses. *J. Phys. Chem. Lett*. 2019, *10*, 1784-1789.
21. 13.Chen, R.; Poling-Skutvik, R.; Howard, M. P.; Nikoubashman, A.; Egorov, S.; Conrad, J. C.; Palmer, J. C.† Influence of polymer flexibility on nanoparticle dynamics in semidilute solutions. *Soft Matter* 2019, *15* (6), 1260-1268.

2018
22. Goel, V.; Pietrasik, J.; Poling-Skutvik, R.; Jackson, A.; Matyjaszewski, K.; Krishnamoorti, R.† Structure of block copolymer grafted silica nanoparticles. *Polymer* 2018, *159*, 138-145.
23. Mongcopa, K. I. S.*; Poling-Skutvik, R.*; Ashkar, R.; Butler, P.; Krishnamoorti, R.† Conformational change and suppression of the Θ-temperature for solutions of polymer grafted nanoparticles. *Soft Matter* 2018, *14* (29), 6102–6108.
24. Roberts, R. C.; Poling-Skutvik, R.; Palmer, J. C.†; Conrad, J. C.† Tracer transport probes relaxation and structure of attractive and repulsive glassy liquids. *J. Phys. Chem. Lett*. 2018, *9* (11), 3008-3013.
25. Conrad, J. C.†; Poling-Skutvik, R. Confined flow: consequences and implications for bacteria and biofilms. *Annu. Rev. Chem. Biomol. Eng.* 2018, *9* (1), 175-200.
26. Chen, R.*; Poling-Skutvik, R.*; Nikoubashman, A.; Howard, M. P.; Conrad, J. C.; Palmer, J. C.† Coupling of nanoparticle dynamics to polymer center-of-mass motion in semidilute polymer solutions. *Macromolecules* 2018, *51* (5), 1865-1872.
27. Poling-Skutvik, R.; Lee, J.; Narayanan, S.; Krishnamoorti, R.†; Conrad, J. C.† Tunable assembly of gold nanorods in polymer solutions to generate controlled nanostructured materials. *ACS Appl. Nano Mater.* 2018, *1* (2), 877–885.

2017
28. Poling-Skutvik, R.; Olafson, K. N.; Narayanan, S.; Stingaciu, L.; Faraone, A.; Conrad, J. C.†; Krishnamoorti, R.† Confined dynamics of grafted polymer chains in solutions of linear polymer. *Macromolecules* 2017, *50* (18), 7372–7379.
29. Safari, M. S.; Poling-Skutvik, R.; Vekilov, P. G.†; Conrad, J. C.† Differential dynamic microscopy of bidisperse colloidal suspensions. *npj Microgravity* 2017, *3* (1), 21.
30. Kim, J.; Poling-Skutvik, R.; Trabuco, J. R. C.; Kourentzi, K.; Willson, R. C.†; Conrad, J. C.† Orientational binding modes of reporters in a viral-nanoparticle lateral flow assay. *Analyst* 2017, *142* (1), 55–64.
    - *Artwork featured on January Cover* (link)
    - *Designated HOT article*

2016
31. Poling-Skutvik, R.; Mongcopa, K. I. S.; Faraone, A.; Narayanan, S.; Conrad, J. C.†; Krishnamoorti, R.† Structure and dynamics of interacting nanoparticles in semidilute polymer solutions. *Macromolecules* 2016, *49* (17), 6568–6577.

2015
32. Safari, M. S.; Vorontsova, M. A.; Poling-Skutvik, R.; Vekilov, P. G.†; Conrad, J. C.† Differential dynamic microscopy of weakly scattering and polydisperse protein-rich clusters. *Phys. Rev. E* 2015, *92* (4), 42712.
33. Poling-Skutvik, R.; Krishnamoorti, R.†; Conrad, J. C.† Size-dependent dynamics of nanoparticles in unentangled polyelectrolyte solutions. *ACS Macro Lett.* 2015, *4* (10), 1169–1173.

2014 34. Babaye Khorasani, F.; Poling-Skutvik, R.; Krishnamoorti, R.†; Conrad, J. C.† Mobility of nanoparticles in semidilute polyelectrolyte solutions. *Macromolecules* 2014, *47* (15), 5328–5333.

AWARDS AND HONORS

2024 **NSF CAREER Award**, National Science Foundation

2022 **Doctoral New Investigator Award**, American Chemical Society Petroleum Research Fund

2018 **Finalist in the Excellence in Graduate Research Symposium**, American Institute of Chemical Engineers
Finalist for the Frank J. Padden Jr. Award for Excellence in Polymer Physics Research, American Physical Society
APS Invited Student Talk at the APS/CNM Annual User Meeting, Argonne National Lab
Travel Award for APS/CNM Annual User Meeting, Argonne National Lab
Research highlighted for Department of Energy triennial review, Oak Ridge National Lab

2017 **Poster Award**, Organization of Chemical Engineering Graduate Students Symposium, University of Houston
Poster Award for Graduate Student Research, Society of Rheology
Cullen Travel Grant, University of Houston

2015 **Poster Award**, Organization of Chemical Engineering Graduate Students Symposium, University of Houston
Travel Grant, NorTex Petroleum Cluster

2013 **Full Tuition Scholarship**, The Cooper Union for the Advancement of Science and Art

RESEARCH SUPPORT

Current Support:

2020-2023 **University of Rhode Island**, Start-Up Funds, $425,000, PI

2022-2024 **American Chemical Society Petroleum Research Fund**, Doctoral New Investigator, $110,000, PI (100% Effort)
Isolating the yield stress in tunable thixotropic emulsions

2023-2025 **RI-INBRE**, Early Career Development, $293,740, PI (100% Effort)
Hydrogels with improved biomimicry to screen in vitro transport of nanoparticle vectors

2023-2024 **University of Rhode Island**, Proposal Development Grant, $19,854, PI (100% Effort)
Self-oscillating nanoparticle assemblies: a novel class of active materials

2023-2026 **Department of Transportation**, Pipeline Safety Research Competitive Academic Agreement Program (CAAP), $1,000,000, Co-PI (PI: Srivastava, *Brown University*) (33 % Effort)
Selection and development of safer polymer and composite pipeline liners through microstructural and macroscopic study of materials and designs

2023-2028 **National Institutes of Health**, ESTEEMED R25, $1,142,105, Co-PI (PI: Meenach) (25% Effort)
ESTEEMED Scholars Program at the University of Rhode Island

2024 **Rhode Island Water Resources Center**, United States Geological Survey, $19,300, PI (100% Effort)
Nanoparticle-based sensors for real-time, continuous PFAS identification

2024-2026 **NIUVT**, Comprehensive Grant, $350,000, PI, (34% Effort)
Harvesting seafloor energy to support autonomous underwater devices

2024-2029 **National Science Foundation**, CBET, CAREER, $589,933, PI (100% Effort)
CAREER: Telechelic triblock copolymers as a platform to design functional colloidal gels

2024-2027 **National Science Foundation**, REU, $472,193, Co-I (PI: Craver) (1% Effort)
REU-Site: URI Plastic Initiative at the University of Rhode Island

Completed Support:

2021-2022 **Rhode Island Foundation**, Medical Research Funds, $25,000, Pi (100% Effort)
Development of a biomimetic tissue library for targeted drug delivery assays

2022-2023 **RI-INBRE**, Pilot Project, $40,000, PI (100% Effort)
Responsive hydrogels to enhance in vitro *screening of theranostics*

INVITED PRESENTATIONS

2024 **University of Cincinnati Seminar** — ***University of Cincinnati*, Cincinnati, OH**
Presentation: Bottom-Up Design of Biomimetic Soft Matter

2023 **Brown Fluids Seminar** — ***Brown University*, Providence, RI**
Presentation: The Yield Transition in Gels: Accounting for Structural Breakdown

American Physical Society March Meeting — **Las Vegas, NV**
Presentation: The Yield Transition in Gels: Accounting for Structural Breakdown

American Chemical Society Fall Meeting — **San Francisco, CA**

Presentation: Evaluating kinetics of network restructuring in colloidal gels using serial creep divergence rheology

Bridgewater State University Chemistry Seminar — ***Bridgewater State University*, Bridgewater, MA**
Presentation: From nano to macro: designing soft matter systems that replicate biology

University of Rhode Island Amgen Chemical Engineering Seminar — ***University of Rhode Island*, Kingston, RI**
Presentation: Incorporating Dynamics into Structure-Property Relationships for the Next Generation of Soft Matter

2022 **New England Complex Fluids** — ***Northeastern University*, Boston, MA**
Presentation: Tuning the linear and non-linear rheology in suspensions of deformable particles

2021 **SHUG/CNMS User Meeting** — ***Oak Ridge National Lab*, Oak Ridge, TN (Virtual)**
Presentation: Confined dynamics of grafted polymer chains and implications for transport

APS/CNM User Meeting — ***Argonne National Lab*, Argonne, IL (Virtual)**
Presentation: Relating dynamics of soft materials across nano, micro and mesoscales

Brown Fluids Seminar — ***Brown University*, Providence, RI (Virtual)**
Presentation: Heterogeneous soft materials: effects of local dynamics on transport and mechanics

2020 **University of Rhode Island Amgen Seminar Series** — ***University of Rhode Island,* Kingston, RI**
Presentation: Relating structure and dynamics in complex soft materials

PRESENTATIONS AND POSTERS

2024 **American Physical Society March Meeting** — **Minneapolis, MN**
Presentation: Nanoparticle dynamics in fully synthetic biomimetic analogues

ACS Colloids — ***University of Washington*, Seattle, WA**
Presentation: Fracture and yielding motifs in colloidal gels

Polymer Physics Gordon Research Conference — **Holyoke, MA**
Poster: Enhancing the bridging density of triblock copolymers

American Institute of Chemical Engineers Fall Meeting — **San Diego, CA**
Presentation: TBD

2023 **American Institute of Chemical Engineers Fall Meeting** — **Orlando, FL**
Presentation: Polymer-linked emulsions as fully synthetic tissue mimics to evaluate nanoparticle transport

ACS Colloids — ***North Carolina State University*, Raleigh, NC**
Presentation: Transport of nanoparticles in biomimetic polymer-linked emulsions

2022 **Society of Rheology Annual Meeting** — **Chicago, IL**
Presentation: Triblock copolymers as effective additives to control the linear and nonlinear rheology of emulsion suspensions

American Institute of Chemical Engineers Fall Meeting — **Phoenix, AZ**
Presentation: Controlling the nonlinear rheology of emulsions using telechelic block copolymers

Polymer Physics Gordon Research Conference — **Holyoke, MA**
Poster: Telechelic Triblock Copolymers as Efficient Rheological Modifiers

ACS Colloids — ***Colorado School of Mines*, Golden, CO**
Presentation: Isolating the yield transition in thixotropic cellulose nanocrystal gels

American Physical Society March Meeting — **Chicago, IL**
Presentation: Controlling emulsion elasticity by bridging telechelic triblock copolymers

2021 **American Institute of Chemical Engineers Fall Meeting** — **Boston, MA**
Presentation: Tuning the yield stress in suspensions of soft colloids

Society of Rheology Annual Meeting — **Bangor, ME**
Presentation: Responsive yielding in colloidal suspensions

ACS Colloids **Virtual**
Presentation: Tunable yield stresses in suspensions of porous microcapsules *via* internal additives

American Physical Society March Meeting **Virtual**
Presentation: Isolating the yield stress in thixotropic fibrillar gels

2020 **NANO Conference (Sustainable Nanotechnology Organization and Nanotechnology, Occupational and Environmental Health Committee)** **Virtual**
Poster: Mechanisms for enhanced transport of nanoparticles in complex fluids

New England Complex Fluids ***Brandeis University*, Waltham, MA (Virtual)**
Presentation: Measuring the yield stress of a thixotropic fluid

American Physical Society March Meeting **Denver, CO (Virtual)**
Presentation: Role of soft interactions in enhanced diffusivity of polymer-grafted nanoparticles in heterogeneous environments
Poster: Bifurcated yielding response of aging fibrillar networks

2019 **American Institute of Chemical Engineers Fall Meeting** **Orlando, FL**
Presentation: Rheology and yielding of fibrillar networks

Society of Rheology Annual Meeting **Raleigh, NC**
Presentation: Bifurcated yielding response of aging fibrillar networks

Mid-Atlantic Soft Matter Symposium ***Johns Hopkins University,* Baltimore, MD**
Presentation: Aging of cellulose nanofibril gels after yielding

University of Pennsylvania Polymer Symposium **Philadelphia, PA**
Presentation: Relaxations in complex fluids and implications for transport

2018 **American Institute of Chemical Engineers Fall Meeting** **Pittsburgh, PA**
Presentation: Softly confined relaxations of grafted polymers
- *Finalist presentation in the Excellence in Graduate Polymer Research award session*

Presentation: Tunable assembly of gold nanorods in polymer solutions to generate controlled nanostructured materials

ACS Colloids ***Penn. State University*, State College, PA**
Presentation: Tunable assembly of gold nanorods in semidilute polymer solutions

American Physical Society March Meeting **Los Angeles, CA**
Presentation: Softly confined relaxations of grafted polymers
- *Finalist presentation in Frank J. Padden award session*

2017 **Organization of Chemical Engineering Graduate Students Symposium** ***University of Houston,* Houston, TX**
Poster: Polymer-induced structural changes in suspensions of gold nanorods
- *Poster award*

Society of Rheology Spring Meeting **Tampa, FL**
Presentation: Dynamics of polymer-grafted nanoparticles in solutions of linear polymer: a combined neutron and x-ray scattering study
Poster: Dynamics of concentrated suspensions of nanoparticles in semidilute polymer solutions
- *Poster award for graduate student research and featured in UH News* (link)

American Physical Society March Meeting **New Orleans, LA**
Presentation: Confined relaxations of grafted polymer in solutions of linear polymer
Presentation: Dynamics of interacting particles in semidilute polymer solutions

2016 **Organization of Chemical Engineering Graduate Students Symposium** ***University of Houston,* Houston, TX**
Presentation: Structure and dynamics of nanoparticles dispersed in polymer solutions

ACS Colloids ***Harvard University*, Boston, MA**
Presentation: Dynamics of interacting particles in semidilute polymer solutions

Texas Soft Matter ***University of Texas – Dallas,* Dallas, TX**
Presentation: Dynamics of polymer-grafted nanoparticles using complementary scattering methods

2015 **American Physical Society March Meeting** — **San Antonio, TX**
Presentation: Length-scale dependent diffusivity in dilute and semidilute polyelectrolyte solutions
Poster: Size-dependent effects on mobility of nanoparticles through dilute and semidilute polyelectrolyte solutions

Graduate Research and Scholarships Projects Day — ***University of Houston,*** **Houston, TX**
Poster: Transport of nanoparticles through structured materials

Organization of Chemical Engineering Graduate Students Symposium — ***University of Houston,*** **Houston, TX**
Poster: Particle and polymer dynamics in semidilute solutions
- *Poster award*

Texas Soft Matter — ***Rice University,*** **Houston, TX**
Presentation: Dynamics of nanoparticles in polymer solutions

2014 **Texas Soft Matter** — ***University of Texas*****, Austin, TX**
Poster: Effect of particle size on the dynamics of nanoparticles in semidilute polyelectrolyte solutions

Organization of Chemical Engineering Graduate Students Symposium — ***University of Houston,*** **Houston, TX**
Poster: Size-dependent coupling between particles and polymers in semidilute polyelectrolyte solutions

TEACHING

CHE 503	Dynamics of Chemical Engineering Applications	3 cr.	Fall 2023
CHE 449	Transfer Operations III	3 cr.	Fall 2020 – Fall 2022
CHE/BME 466	Biomaterials	3 cr.	Spring 2021 – Spring 2024
CHE 491/492	Special Projects (Undergraduate research)	3 cr.	Spring 2021 – Current
CHE 491/492	ChemE Car Competition	3 cr.	Fall 2021 – Spring 2023
CHE 491/492	URI ESTEEMED	1 cr.	Fall 2023
CHE 699	PhD Dissertation	6 cr.	Fall 2020 –Current
EGR 106	Foundations of Engineering II	3 cr.	Spring 2022

MENTORING

Graduate Student Advisees (Major Advisor)

PhD Candidate — **Daniel Keane**, Chemical Engineering
Expected Graduation: 12/2025
Thesis: Towards Synthetic Biology: Creating Elastic, Compartmentalized Materials Mimicking Biological Tissue

PhD Candidate — **Elnaz Nikoumanesh**, Chemical Engineering
Expected Graduation: 08/2026
Thesis: Isolating the Yield Transition in Thixotropic Complex Fluids

PhD Candidate — **Mohammadjavad Hajirezaei**, Chemical Engineering
Expected Graduation: 12/2027
Thesis: Development of Safer Polymer and Composite Liners for Pipeline Rehabilitation

PhD Candidate — **Masoud Abdi**, Chemical Engineering (co-advised with Dr. Irene Andreu)
Expected Graduation: 08/2029
Thesis: *Polymer-grafted Nanoparticles for Next-Generation Photometric Sensing*

Student Awards and Honors

2024 **Elnaz Nikoumanesh**, *PhD*, APS DPOLY Short Course Travel Award
2024 **Daniel Keane**, *PhD*, APS DPOLY Short Course Travel Award
2024 **Elnaz Nikoumanesh**, *PhD*, APS DSOFT Future Investigator Travel Award
2023 **Matthew Mellor**, *Undergraduate*, Selected for the Future Leaders in Chemical Engineering Symposium, *North Carolina State University*
2023 **Elnaz Nikoumanesh**, *PhD*, Invited Speaker for the Society of Rheology Future of Rheology Seminar Series
2023 **Daniel Keane**, *PhD*, URI Chemical Engineering Symposium Poster Award
2023 **Elnaz Nikoumanesh**, *PhD*, URI Chemical Engineering Graduate Student Travel Award
2022 **Elnaz Nikoumanesh**, *PhD*, Society of Rheology Student Travel Award

PhD and MS Thesis Committees:

2024 – Now	**Juan Song**, PhD Pharmaceutical Sciences*, "Development and characterization of mucus-penetrating and adhesive nanoparticles for pulmonary delivery applications"*
2023 – Now	**Sophia Boiani**, MS Chemical Engineering, "*Innovative Bioink Formulations for 3D Bioprinting of Tissue-Engineered Intervertebral Disc Implants*"
2023 – Now	**Sophia Tiano**, PhD Chemistry, "*Using transient absorption spectroscopy to study the dynamics of heteroarene dye photooxidation*"
2023 – Now	**Miyuru Madusanka**, PhD Chemistry, "*Probing Intermolecular Interactions of Deep Eutectic Solvents via Infrared Action Spectroscopy*"
2020 – 2023	**Weizhou Yue**, PhD Pharmacy, *"Development of Localized Drug Delivery Strategies for the Treatment of Cancers and Infectious Diseases"*
2022 – 2023	**Lisa Madungwe**, MS Chemical Engineering, "*Cytoplasmic Delivery of Single-Walled Carbon Nanotubes for Disease Detection and Therapy*"
2023	**Shivraj Kotkar**, *University of Houston*, PhD, Chemical Engineering, "*Understanding the Dynamics of Complex Nanoparticle and Polymer Solutions Using Molecular Simulations*"
2023	**Jesse Duroha**, PhD Mechanical, Industrial, and Systems Engineering (Chair), "*Sustainable Ergonomics for Solar Installations"*
2023	**Pedro Mesquita**, MS Mechanical, Industrial, and Systems Engineering (Chair), "*Microfluidic Devices for Microplastics Separation and Identification*"
2023	**Zachary Shepard**, PhD Civil & Environmental Engineering (Chair). "*Nano/Bio Interactions for Synthetic and Natural Nanomaterials*"

Current Undergraduate Student Advisees:

2021 – Now	**Matthew Mellor**, Chemical Engineering
2022 – Now	**Colby Constantine**, Chemical Engineering
2022 – Now	**Charles Joseph Jouaneh**, Chemical Engineering
2023 – Now	**David Amirsadri**, Chemical Engineering
2023 – Now	**Abigail Olson**, Chemical Engineering
2023 – Now	**William Bourke**, Chemical Engineering
2023 – Now	**Maile Campbell**, Industrial and Systems Engineering
2023 – Now	**Aiden Ferreira**, Mechanical Engineering
2023 – Now	**Kylie Hartley**, Chemical Engineering and Cell and Molecular Biology
2023 – Now	**Sean Cooper**, Electrical Engineering
2024 – Now	**Liam Kennings**, Biomedical Engineering
2024 – Now	**Elias Newall-Vuillemot**, Mechanical Engineering

Graduated Undergraduate Student Advisees:

2020 – 2022	**Brittany Briere**, Chemical Engineering
2020 – 2022	**Enrique Hernandez Rodriguez**, Chemical Engineering
2021 – 2022	**Temitope Aina**, Biomedical Engineering
2021 – 2022	**Matthew Noyes**, Chemical Engineering
2021 – 2022	**Annie Brose**, Chemical Engineering
2021 – 2022	**Kaylee Coletti**, Chemical Engineering
2023	**Jonatan Flores**, Pharmaceutical Science
2023	**Steven Rego**, Community College of Rhode Island (INBRE SURF)

SERVICE

Committees at URI:

2023 – Now	Graduate Committee, *Department of Chemical Engineering*
2023 – 2024	Assistant Professor Search Committee, *Departments of Chemical Engineering* and *Biomedical and Pharmaceutical Sciences*
2023	Scientific Research Grant Assistant Search Committee, *COE Research Office*
2023	Program Coordinator Search Committee, *URI ESTEEMED and MARC U*STAR*
2020 – 2023	Undergraduate Committee, *Department of Chemical Engineering*
2022	Teaching Professor Search Committee, *Department of Chemical Engineering*
2021 – 2022	Trans Inclusion Committee, *Gender, and Sexuality Center* *Subcommittees: Syllabus Development, Faculty and Staff Training*

Service to Professional Organizations

2023 – Now	Member, Education Committee, Society of Rheology
2023 – 2025	Membership Committee Chair, DSOFT, American Physical Society

2022 – Now Editorial Advisory Board Member, *iScience*
2024 Organizer and Session Chair for Young Investigator Workshop, *8th International Soft Matter Conference*, Raleigh, NC
2024 Session Chair, Fluid Mechanics (Area 1J), American Institute of Chemical Engineering Annual Meeting
2024 Session Organizer and Chair, ACS Colloids Meeting, *Rheology and Complex Fluids*
2023 Panelist for Soft Matter: Dynamics, National Institute of Standards and Technology, Center for Neutron Research, Neutrons for the Future Workshop
2023 Discussion Leader, Argonne National Lab, Advanced Photon Source, X-Ray Photon Correlation Spectroscopy Workshop
2023 Chair and Organizer, 94th New England Complex Fluids Symposium, University of Rhode Island
2023 Session Chair, DPOLY, American Physical Society March Meeting
2023 Session Organizer and Chair, ACS Colloids Meeting, *Emulsions, Foams, and Surfactants*
2023 Session Chair, Fluid Mechanics (Area 1J), American Institute of Chemical Engineering Annual Meeting
2023 Session Chair, Polymers (Area 8A), American Institute of Chemical Engineering Annual Meeting
2022 Session Chair, Fluid Mechanics (Area 1J), American Institute of Chemical Engineering Annual Meeting
2022 Session Chair, Polymers (Area 8A), American Institute of Chemical Engineering Annual Meeting
2022 Session Chair, DSOFT, American Physical Society March Meeting
2021 Session Chair, Fluid Mechanics (Area 1J), American Institute of Chemical Engineering Annual Meeting
2021 Conference Organizer, March Meeting at URI, New England Complex Fluids Workshop

Proposal and Manuscript Review:

2023 American Chemical Society Petroleum Research Fund Reviewer
2023 NSF Panel Review
2020 – Now Peer-Reviewer
ACS Applied Materials and Interfaces, ACS Applied Nano Materials, ACS Applied Polymer Materials, ACS Macro Letters, AIChE Journal, Cellulose, Electrophoresis, European Polymer Journal E, Frontiers in Physics, GIANT, iScience, Journal of Rheology, Langmuir, Macromolecules, New Journal of Chemistry, Particle and Particle Systems Characterization, Physical Review Applied, Physical Review E, Physical Review Letters, Physics of Fluids, Rheologica Acta, Small, Soft Matter

Outreach:

2024 – Now **LGBTQ+ in STEM**, Coordinator
Developed and led STEM nights introducing LGBTQ+ youth to science and engineering principles through hands-on experimentation with colloidal and polymeric gels
2023 – Now **URI ESTEEMED**, Scholarship Director
Designed and conducted outreach efforts to incoming ESTEEMED cohort focusing on colloidal inks for biomimicry, design of non-Newtonian fluids to understand rheology, and ecological microscopy.
2023 **Rhode Island Nano-Bio Engineering (RINBE) Academy**
Conducted nanoparticle assembly experiments with high school students from Narragansett High School

PROFESSIONAL AFFILIATIONS

- Society of Rheology (SoR)
- American Institute of Chemical Engineers (AIChE)
- American Physical Society (APS)
- American Chemical Society (ACS)