

LaShanda T.J. Korley, Ph.D.
Distinguished Professor
Department of Materials Science and Engineering
Department of Chemical and Biomolecular Engineering
University of Delaware
Newark, DE 19716
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Education

Massachusetts Institute of Technology (MIT), Department of Chemical Engineering/Program in Polymer Science and Technology, 2000-2005; Degree: Ph.D.
Advisors: Profs. Paula T. Hammond and Gareth H. McKinley

Thesis Title: PEO-containing Copolymers as Polyurethane Soft Segments in the Development of High Performance Materials

Georgia Institute of Technology (GA Tech), 1997-1999; Degree: B.S. Chemical Engineering (Dual Degree Program)

Clark Atlanta University (CAU), 1994-1998; Degrees: B.S. Chemistry and Engineering

Professional Experience

Distinguished Full Professor

University of Delaware (UD), Department of Materials Science and Engineering, September 2020 –

University of Delaware (UD), Department of Chemical and Biomolecular Engineering, September 2020 –

Co-Director, NSF MRSEC Center for Hybrid, Active and Responsive Materials(CHARM)
September 2020 –

Director, DOE ERFC Center for Plastics Innovation (CPI)
August 2020 –

Distinguished Associate Professor

University of Delaware (UD), Department of Materials Science and Engineering, January 2018 – August 2020

University of Delaware (UD), Department of Chemical and Biomolecular Engineering, January 2018 – August 2020

Associate Director, Center for Research in Soft matter and Polymers (CRiSP)
April 2018 –

Associate Editor, Journal of Applied Physics
June 2018 –

Director, PIRE: Bio-inspired Materials and Systems
September 2017 –

MLK Visiting Associate Professor,
MIT, Department of Chemistry, January 2016 – August 2016

Visiting Associate Professor
Petroleum and Petrochemical College (PPC), Chulalongkorn University, July 2015

Climo Associate Professor
Department of Macromolecular Science and Engineering, Case Western Reserve University (CWRU), 2014-2017

Climo Assistant Professor
Department of Macromolecular Science and Engineering, Case Western Reserve University (CWRU), 2012 – 2014

Platform Leader, NSF Science and Technology Center for Layered Polymeric Systems (CLiPS)
Case School of Engineering, CWRU, 2011-2016

Nord Distinguished Assistant Professor
Department of Macromolecular Science and Engineering, CWRU, 2009 – 2012

Co-Director, REU Program in Polymers
Department of Macromolecular Science and Engineering/CLiPS, CWRU, 2009-2015

Director, REU Site: Bio-inspired Materials and Systems
Case School of Engineering, CWRU, 2017

Member, NSF Science and Technology Center, CLiPS
Case School of Engineering, CWRU, 2007-2016

Assistant Professor
Department of Macromolecular Science and Engineering, CWRU, 2007-2014

Provost's Academic Diversity Postdoctoral Fellow
Department of Chemical Engineering, Cornell University, 2005-2007

Postdoctoral Associate
Department of Chemical Engineering, MIT, 2005

Graduate Instructor
Department of Chemical Engineering, MIT, 2004

Graduate Teaching Assistant
Department of Chemical Engineering, MIT, 2002

Graduate Research Assistant
Department of Chemical Engineering, MIT, 2000-2005

Chemical Engineering Corporate Research Fellow
Bell Laboratories, Lucent Technologies, Murray Hill, NJ 1999

Current Research Areas

Functional polymeric material design

- *Bio-inspired systems*
- *Hierarchical peptide polymer hybrids*
- *Sustainable materials*
- *Polymer recycling and upcycling strategies*
- *New fiber and composite manufacturing strategies*
- *Responsive composites*
- *Interplay of covalent and non-covalent interactions*

Honors, Awards, and Fellowships

2022 ACS PMSE Fellow

2021 AIChE MAC Gerry Lessells Award

2021 Chemical and Engineering News Black Trailblazer

2020 New Castle County Chamber of Commerce, Trailblazer Award

2020 AIMBE Fellow

2019 NOBCCChE Lloyd N. Ferguson Young Scientist Award

2019 China-America FOE organizing committee

2019 *Soft Matter* Emerging Investigator Alumni Spotlight

2019 National Nanotechnology Coordination Office, Celebrating Women in Nanotechnology

Prior to UDeI

2016 15th Japanese/American Frontiers of Science Symposium - Planning

Group Member

2014 14th Japanese/American Frontiers of Science Symposium – Planning

Group Member

2013 Nominated, Young Talent Award (**1 of 6 internationally**) Polymers for Advanced Technologies

2013 Invited Participant Global Challenges Summit (US National Academy of

Engineering (NAE), UK Royal Society of Engineering & Chinese Academy of Engineering

2012 Japanese/American Frontiers of Science Symposium – National Academy of Science

Kavli Fellow

2012 NAE U.S. Frontiers of Engineering Symposium

2012 Best Poster Prize, National Faculty Collaborative Poster Session

2011 DuPont Young Professor Award

2011 CWRU Diekhoff Graduate Mentoring Award

2011 International of Pure and Applied Chemistry (IUPAC) Young Observer

2010 National Science Foundation (NSF) CAREER Award

2010 3M Nontenured Faculty Grant

2010 Who's Who in Black Cleveland

2010 Kaleidoscope Magazine 40-40 Club

2010 NSF Broadening Research Participation Initiation Grant in Engineering

2008 US-India Nanoscience and Engineering Institute (USINSEI)

2007 NSF ADVANCE Cross-Disciplinary Initiative for Minority Women Faculty

Prior to CWRU

2005 Cornell University Provost's Academic Diversity Postdoctoral Fellowship

2005 Gordon Research Conference Carl Storm Fellowship

2004, 2002 Georgia Tech FOCUS Fellow

2003 MIT Ford Motor Company Fellowship

1999 Bell Labs, Lucent Technologies Cooperative Research Fellowship
1999 Office of Naval Research Graduate Research Fellowship, *Declined*
1999 Ford Foundation Predoctoral Fellowship, *Declined*
1999 NSF Graduate Research Fellowship, *Declined*
1995 American Chemical Society Scholarship Award

Research Publications

The names of current and former graduate students and postdocs are underlined, while undergraduate students are doubled underlined in the publication list. [#] citations as of May 9, 2022

Peer-Reviewed Publications

1. [19] Jensen, R.E.; O'Brien, E.; Wang, J.; Bryant, J.; Ward, T.C.; **James, L.T.**; Lewis, D.A.; Characterization of Epoxy-Surfactant Interactions; *Journal of Polymer Science: Polymer Physics Edition* **1998**, 36(15), 2781-2792.
2. [346] **Korley, L.T.J.**; Pate, B.D.; Thomas, E.L.; Hammond, P.T.; Effect of the Degree of Soft and Hard Segment Ordering on the Morphology and Mechanical Behavior of Semicrystalline Segmented Polyurethanes; *Polymer* **2006**, 47(9), 3073-3082; DOI:10.1016/j.polymer.2006.02.093
3. [67] **Korley, L.T.J.**; Liff, S.M.; Kumar, N.; McKinley, G.H.; Hammond, P.T.; Preferential Association of Segment Blocks in Polyurethane Nanocomposites; *Macromolecules* **2006**, 39(20), 7030-7036; DOI: 10.1021/ma061383
4. [103] Waletzko, R.S.; **Korley, L.T.J.**; Pate, B.D.; Thomas, E.L.; Hammond, P.T.; Role of Increased Crystallinity in Deformation-Induced Structure of Segmented Thermoplastic Polyurethane Elastomers with PEO- and PEO-PPO-PEO Soft Segments and HDI Hard Segments, *Macromolecules*, **2009**, 42(6), 2041–2053; DOI: 10.1021/ma8022052
5. [72] Ponting, M.; Abernathy, T.; **Korley, L.T.J.**; Hiltner, A.; Baer, E.; Gradient Multilayer Films by Forced Assembly Coextrusion, *Industrial and Engineering Chemistry Research (special contribution in honor of Don Paul's 65th Birthday)*, **2010**, 49(23), 12111–12118; DOI: 10.1021/ie100321h
6. [19] Kamperman, M; **Korley, L.T.J.**; Yau, B.; Johansen, K.M.; Joo, Y.L.; Wiesner, U.; Nanomanufacturing of Continuous Composite Nanofibers with Confinement-induced Morphologies, *Polymer Chemistry* **2010**, 1, 1001-1004; DOI:10.1039/c0py00146e
7. [51] Stone, D.A.; **Korley L.T.J.**; *Invited Perspective to Macromolecules, Cover Article*, *Macromolecules* **2010**, Bioinspired Polymeric Nanocomposites, 43(22), 9217–9226; DOI:10.1021/ma101661p
8. [28] Stone, D.A.; Hsu, L.; Wheeler, N.R.; Wilusz, E.; Zukas, W.; Wnek, G.E.; **Korley, L.T.J.**; Mechanical Enhancement via Self-Assembled Nanostructures in Polymer Nanocomposites, *Soft Matter* **2011**, 7(6), 2449 – 2455; DOI:10.1039/C0SM01262A
9. [32] Burt, T.M.; Keum, J.; Hiltner, A.; Baer, E.; **Korley, L.T.J.**; Confinement of Elastomeric Block Copolymers via Forced Assembly Co-extrusion, *ACS Applied Materials and Interfaces* **2011**, 3(12), 4804-4811; DOI:10.1021/am201297f

10. [44] Stone, D.A.; Wanasekara, N.D.; Jones, D.; Wheeler, N.R.; Wilusz, E.; Zukas, W.; Wnek, G.E.; **Korley, L.T.J.**; All-Organic, Stimuli-Responsive Polymer Composites with Electrospun Fiber Fillers, *ACS Macro Letters* **2012**, *1*(1), 80-83; DOI:10.1021/mz200049v
11. [38] Johnson, J. Casey; Wanasekara, N.D.; **Korley, L.T.J.**; Utilizing Peptidic Ordering in the Design of Hierarchical Polyurethane/ureas, *Biomacromolecules* **2012**, *13*(5), 1279-1286; DOI:10.1021/bm201800v
12. [40] Lai, C-Y.; Hiltner, A.; Baer, E.; **Korley, L.T.J.**; The Deformation of Confined Poly(ethylene oxide) in Multilayer Films, *ACS Applied Materials and Interfaces* **2012**, *4*(4), 2218–2227; DOI: 10.1021/am300240r
13. [32] Johnson, J.C; **Korley, L.T.J.**; Invited Review, Enhanced Mechanical Pathways through Nature's Building Blocks: Amino Acids; *Soft Matter* **2012**, *8*(45), 11431-11442; DOI: 10.1039/C2SM26185E
14. [30] Burt, T.M.; Jordan, A.M.; **Korley, L.T.J.**; Towards Anisotropic Materials via Forced Assembly Co-extrusion, *ACS Applied Materials and Interfaces* **2012**, *4*(10), 5155–5161; DOI:10.1021/am301072s
15. [33] Wanasekara, N.W.; Stone, D.A.; Wnek, G.E., **Korley, L.T.J.**; Stimuli-responsive and Mechanically-switchable Electrospun Composites; *Macromolecules* **2012**, *45*(22), 9092–9099; DOI:10.1021/ma301896u
16. [14] Burt, T.M.; Jordan, A.M.; **Korley, L.T.J.**; Investigating Interfacial Contributions on the Layer-thickness Dependent Mechanical Response of Confined Self-assembly via Forced Assembly, *Macromolecular Chemistry and Physics* **2013**, *214*(8), 873-881; DOI:10.1002/macp.201200588
17. [13] Wanasekara, N.W.; **Korley, L.T.J.***; Invited Feature Article, Toward Tunable and Adaptable Polymer Nanocomposites; *Journal of Polymer Science Part B: Polymer Physics* **2013**, *51*(7), 463-467; DOI:10.1002/polb.23253
18. [10] Burt, T.M.; Monemian, S.; Jordan, A.M.; **Korley, L.T.J.**; Thin Film Confinement of Spherical Block Copolymers via Forced Assembly Co-extrusion, *Soft Matter* **2013**, *9*(17), 4381-4385; DOI:10.1039/C3SM27797F
19. [19] Wojtecki, R.J.; Wu, Q.; Johnson, J.C.; Ray, D. E.; **Korley, L.T.J.**, Rowan, S.J.; Optimizing the formation of 2,6-bis(N-alkyl-benzimidazolyl)pyridine-containing [3]catenates through component design, *Chemical Science* **2013**, *4*(12), 4440-4448; DOI: 10.1039/C3SC52082J
20. [26] Johnson, J. Casey; Wanasekara, N.D.; **Korley, L.T.J.**; Invited Article 2014 Emerging Investigators Themed Issue, Influence of Secondary Structure and Hydrogen-Bonding Arrangement on the Mechanical Properties of Peptidic-Polyurea Hybrids, *J. Mat. Chem. B* **2014**, *2*, 2554-2561; DOI: 10.1039/C3TB21476A
21. [75] Wang, J.; Langhe, D.; Ponting, M.; Wnek G.E.; **Korley, L.T.J.**; Baer, E.; Manufacturing of Polymer Continuous Nanofibers Using a Novel Co-extrusion and Multiplication Technique, *Polymer* **2014**, *55*(2), 673-685; DOI: 10.1016/j.polymer.2013.12.025

22. [10] Jordan, A.M.; Lenart, W.; Carr, J.; Baer, E.; **Korley, L.T.J.**; Structural evolution during mechanical deformation in high-barrier PVDF-TFE/PET multilayer films using in-situ X-ray techniques. *ACS Applied Materials and Interfaces* **2014**, 6(6), 3987-3994; DOI: 10.1021/am4053893
23. [65] Kim, S-E.; Wang, J.; Jordan, A.M.; **Korley, L.T.J.**; Baer, E.; Pokorski, J; Surface Modification of Melt Extruded Poly(ϵ -caprolactone) Nanofibers: Toward a New Scalable Biomaterial Scaffold, *ACS Macro Letters* **2014**, 3(6), 585–589. DOI: 10.1021/mz500112d
24. [14] Jang, K-S.; Johnson, J.C.; Hegmann, T.; Hegmann, E.; **Korley, L.T.J.**; Biphenyl-based Liquid Crystals for Elevated Temperature Processing with Polymers, *Liquid Crystals* **2014**, 41(10), 1473-1482; DOI: DOI:10.1080/02678292.2014.926405
25. [24] Monemian, S.; Jang, K-S.; Ghassemi, H.; **Korley, L.T.J.**; Probing the interplay of ultraviolet crosslinking and non-covalent interactions in supramolecular elastomers, *Macromolecules* **2014**, 47(16), 5633-5642; DOI:10.1021/ma501183a
26. [50] Sharma, A., Neshat, A., Mahnen, C.J., Nielsen, A.d., Snyder, J., Stankovich, T.L., Daum, B.G., LaSpina, E.M., Beltrano, G., Li, S., Park, B.-W., Clements, R.J., Freeman, E.J., Malcuit, C., McDonough, J.A., **Korley, L.T.J.**, Hegmann, T., Hegmann, E.; Biocompatible, biodegradable and porous liquid crystal elastomer scaffolds for spatial cell cultures, *Macromolecular Bioscience* **2015**, 15, 200–214; DOI:10.1002/mabi.201400325. *Materials Views*, 10/24/14, Journal Back Cover
27. [7] Johnson, J.C., **Korley, L.T.J.**, Tsige, M. Coarse-Grained Modeling of Peptidic/PDMS Triblock Morphology, *The Journal of Physical Chemistry B* **2014**, 118(47), 13718-13728; DOI:10.1021/jp506553v
28. [37] Jordan, A.M., **Korley, L.T.J.**; Toward a Tunable Fibrous Scaffold: Structural Development during Uniaxial Drawing of Coextruded Poly(caprolactone) Fibers, *Macromolecules*, **2015**, 48 (8), 2614–2627; DOI:10.1021/acs.macromol.5b00370
29. [26] Monemian, S., **Korley, L.T.J.**; Exploring the Role of Supramolecular Associations in Mechanical Toughening of Interpenetrating Polymer Networks, *Macromolecules* **2015**, 48(19) 7146-7155; DOI:10.1021/acs.macromol.5b01752
30. [13] Wanasekara, N.D., Matolyak, L., **Korley, L.T.J.**; Tunable Mechanics in Electrospun Composites via Hierarchical Organization, *ACS Applied Materials and Interfaces* **2015**, 47(41), 22970-22979; DOI:10.1021/acsami.5b06230
31. [12] Jordan, A.M., Marotta, T., **Korley, L.T.J.**; Reducing Environmental Impact: Solvent and PEO Reclamation During Production of Melt-Extruded PCL Nanofibers, *ACS Sustainable Chemistry and Engineering* **2015**, 3(11), 2994-3003; DOI:10.1021/acssuschemeng.5b0101
32. [5] Jang, K-S., **Korley, L.T.J.**; Phase diagrams of thermally-stable, polymer-dispersed liquid crystals: exploring the impact of chain length and chemical structure, *Polymer Engineering and Science* **2016**, 56(4), 388-393; DOI:10.1002/pen.24264
33. [61] Jordan, A.M.; Viswanath, V.; Kim, S.-E.; Pokorski, J.; **Korley, L.T.J.**; *Invited Review*, Processing and Surface Modification of Polymer Nanofibers for Biological Scaffolds: A

Review, *Journal of Materials Chemistry B* **2016**, *4*, 5958-5974; DOI:10.1039/C6SM00749J: Designated a 2016 Journal of Materials Chemistry B Hot Paper

34. [9] Lenart, W.R.; Jang, K.-S.; Jordan, A.M., Baer, E.; **Korley, L.T.J.**; Mechanically Tunable Dual-Component Polyolefin Fiber Mats via Two-Dimensional Multilayer Coextrusion, *Polymer* **2016**, *103*(26), 328–336; DOI:10.1016/j.polymer.2016.09.060
35. [11] **Matolyak, L.E.**; Keum, J.K.; **Korley, L.T.J.**; Molecular design – network architecture and its impact on the organization and mechanics of peptide-polyurea hybrids, *Biomacromolecules* **2016**, *17*(12), 3931–3939; DOI:10.1021/acs.biomac.6b013
36. [14] **Alexander, Symone L.M.**; **Korley, L.T.J.**; Tunable hygromorphism: structural implications of low molecular weight gels and electrospun nanofibers in bilayer composites, *Soft Matter* **2017**, *13*, 283-291; DOI:10.1039/C6SM00749J
37. [18] Sharma, A., Mori, T., Mahnen, C.J., Everson, H.R., **Leslie, M.T.**, Nielsen, A.d., Lussier, L., Zhu, C., Malcuit, C., Hegmann, T., McDonough, T., Freeman, E.J., **Korley, L.T.J.**, Clements, R.J., Hegmann, E.; Effects of structural variations on the cellular response and mechanical properties of biocompatible, biodegradable, and porous smectic liquid crystal elastomers, *Macromolecular Bioscience* **2017**, *17* 1600278; DOI:10.1002/mabi.201600278
38. [99] Chen, M., Gu, Y., Singh, A., Zhong, M., **Jordan, A.M.**, Balazs, A.C., **Korley, L.T.J.**, Johnson, J.A.; Living additive manufacturing: transformation of parent gels into diversely functionalized daughter gels made possible by visible light photo-redox catalysis, *ACS Central Science* **2017**, *3* (2), 124–134; DOI: 10.1021/acscentsci.6b00335 (*First Reaction: Cyrille Boyer*)
39. [11] Kim, S.-E.; **Jordan, A.M.**; **Korley, L.T.J.**; Porkoski, J.; Drawing in poly (ϵ -caprolactone) Fibers: Tuning Mechanics, Fiber Dimensions and Surface-Modification for Biomedical Applications, *Journal of Materials Chemistry B* **2017**, *5*, 4499-4506; DOI:10.1039/C7TB00096K
40. [56] Gu, T., Kawamoto, K., Zhong, M., Chen, M., Hore, M.J.A., **Jordan, A.M.**, Olsen, B.A., **Korley, L.T.J.**, Johnson, J.A.; Semi-batch monomer addition as a general method to tune and enhance the mechanics of polymer networks via loop defect control, *Proceedings of the National Academy of Sciences* **2017**, *114*(19) 4875-4880; DOI:10.1073/pnas.1620985114
41. [19] **Thompson, C.B.**; **Korley, L.T.J.**; *Invited Review*, Harnessing Supramolecular and Peptidic Self-Assembly for the Construction of Reinforced Polymeric Tissue Scaffolds, *Bioconjugate Chem.* **2017**, *28* (5), 1325–1339; DOI: 10.1021/acs.bioconjchem.7b00115
42. [8] Intelligent nanofiber composites: Dynamic communication between materials and their environment **Alexander, S.L.M.**; **Matolyak, L.E.**; **Korley, L.T.J.**; *Invited Feature Article*, *Macromolecular Materials and Engineering* **2017**, *302*, 1700133; DOI: 10.1002/mame.201700133
43. [26] **Jordan, A.M.**; Kim, S.-E.; **Van de Voorde, K.M.**; Porkoski, J.; **Korley, L.T.J.**; In Situ Fabrication of Fiber Reinforced Three-Dimensional Hydrogel Tissue Engineering Scaffolds, *ACS Biomater. Sci. Eng.* **2017**, *3* (8), 1869–1879; DOI: 10.1021/acsbomaterials.7b00229

44. [4] Alexander, S.L.M.; **Korley, L.T.J.**; Programming Shape and Tailoring Transport: Advancing Hygroscopic Bilayers with Aligned Nanofibers, *Soft Matter* **2017**, *13*, 5589 – 5596; DOI: 10.1039/C7SM00962C
45. [7] Matolyak, L.E.; Keum, J.K.; Van de Voorde, K.M.; **Korley, L.T.J.**; *Invited Article, Special Issue - Peptide materials*, Synthetic Approach to Tailored Physical Associations in Peptide-Polyurea/Polyurethane Hybrids, *Organic and Biomolecular Chemistry* **2017**, *15*, 7607-7617; DOI: 10.1039/c7ob01352c
46. [7] Prévôt, M.E.; Bergquist, L. E.; Sharma, A., Mori, T., Gao, Y.; Bera, T.; Zhu, C.; Leslie, M.T.; Cukelj, R.; **Korley, L.T.J.**; Freeman, E.J.; McDonough, J. A., Clements, R.J., Hegmann, E.; New developments in 3D liquid crystal elastomers scaffolds for tissue engineering: from physical template to responsive substrate, *Proc. of SPIE* **2017**, *10361*,103610T-11; DOI: 10.1117/12.2275338
47. [37] Prévôt, M. E.; Andro, H.; Alexander, S.L.M.; Ustunel, S.; Zhu, C.; Nikolov, Z.; Rafferty, S. T.; Brannum, M. T.; Kinsel, B.; **Korley, L.T.J.**; Freeman, E.J.; McDonough, J.A.; Clements, R.J.; Hegmann, E.; Liquid crystal elastomer foams with elastic properties specifically engineered as biodegradable brain tissue scaffolds, *Soft Matter* **2018**, *14*, 354 – 360; DOI: 10.1039/c7sm01949a
48. [4] Alexander, S. L. M.; **Korley, L.T.J.**; *Invited Article*, Nucleation effects of high molecular weight polymer additives on low molecular weight gels, *Polymer Journal* **2018**, *50*, 775-786; DOI: 10.1038/s41428-018-0076-0
49. [3] Matolyak, L.E.; Thompson, C. B.; Li, B.; Keum, J.; Cowen, J.; Tomazin, R.; **Korley, L.T.J.**; Secondary Structure Mediated Hierarchy and Mechanics in Polyurea-Peptide Hybrids, *Biomacromolecules* **2018**, *19* (8), 3445–3455; DOI: 10.1021/acs.biomac.8b00762
50. [3] Alexander, S. L. M.; **Korley, L.T.J.**; Restricting molecular mobility in polymer nanocomposites with self-assembling low molecular weight gel additives, *ACS Applied Materials and Interfaces* **2018**, *10*, 43040–43048; DOI: 10.1021/acsami.8b15112
51. [50] Brannum, M.L.; Steele, A.B.; Venetos, M.C.; **Korley, L.T.J.**; Wnek, G.E.; White, T.J.; Light Control with Liquid Crystalline Elastomers, *Advanced Optical Materials* **2019**, *7*, 1801683-1801687; DOI: 10.1002/adom.201801683
52. [6] Thompson, C.B.; Chatterjee, S.; **Korley, L.T.J.**; *Invited Article, Special Issue – Biomimetic Polymers*, Gradient Supramolecular Interactions and Tunable Mechanics in Polychaete Jaw Inspired Supramolecular Interpenetrating Networks, *European Polymer Journal* **2019**, *116*, 201-209; DOI: 10.1016/j.eurpolymj.2019.04.015
53. [12] Wang, C.; Brown, G.; Burris, D.; **Korley, L.T.J.**; Epps, III, T.H.; The Coating Architects: Manipulating Multi-Scale Structures in Polymer Coatings to Optimize Interfacial Properties, *ACS Applied Polymer Materials* **2019**, *1*, 9, 2249-2266; DOI:10.1021/acsapm.9b00302
54. [13] Brannum, M.; Auguste, A.; Donovan, B.; Godman, N.; Malatujv, V.; Steele, A.; **Korley, L.T.J.**; Wnek, G.E.; White, T.; Deformation and Elastic Recovery of Acrylate-based Liquid Crystalline Elastomers, *Macromolecules* **2019**, *52*, 21, 8248-8255; DOI:10.1021/acs.macromol.9b01092

55. [8] Redondo, A.; Chatterjee, S.; Brodard, P.; **Korley, L.T.J.**; Gunkel, I.; Weder, C.; Steiner, U.; Melt-Spun Nanocomposite Fibers Reinforced with Aligned Tunicate Nanocrystals, *Polymers* **2019**, 11, 1912; DOI:10.3390/polym11121912
56. [4] Redondo, A.; Jang, D.; **Korley, L.T.J.**; Gunkel, I.; Steiner, U.; Electrospinning of Cellulose Nanocrystal-Reinforced Polyurethane Fibrous Mats, *Polymers* **2020**, 12(5), 1021; DOI:10.3390/polym12051021
57. [7] Van de Voorde, K.; Pokorski, J. P.; and **Korley, L.T.J.**; Exploring morphological effects on the mechanics of blended PLA/PCL extruded fibers fabricated using multilayer coextrusion, *Macromolecules* **2020**, 53(13), 5047-5055; DOI:10.1021/acs.macromol.0c00289
58. [12] Hore, M.J.A.; **Korley, L.T.J.**; and Kumar, S.K.; Introduction to Special Topic: Polymer-Grafted Nanoparticles, *Journal of Applied Physics* **2020**, 128, 030401; DOI:10.1063/5.0019326
59. [16] Thompson, C.B.; **Korley, L.T.J.**; 100th Anniversary of Macromolecular Science Viewpoint: Engineering Supramolecular Materials for Responsive Applications – Design and Functionality, *Invited Viewpoint, ACS Macro Letters* **2020**, 9, 1198–1216; DOI:10.1021/acsmacrolett.0c00418
60. [9] Beckett, L.E.; Lewis, J.T.; Tonge, T.K.; **Korley, L.T.J.**; Enhancement of the mechanical properties of hydrogels with continuous fibrous reinforcement, *ACS Biomaterials Science and Engineering* **2020**, 6(10), 5453–5473; DOI: 10.1021/acsbiomaterials.0c00911
61. [21] Mahajan, J.; O'Dea, R.; Norris, J.; **Korley, L.T.J.**; Epps, III, T.H.; Aromatics from Lignocellulosic Biomass: A Platform for High-Performance Thermosets, *Invited Perspective, ACS Sustainable Chemistry and Engineering* **2020**, 8(40), 15072–15096; DOI:10.1021/acssuschemeng.0c04817
62. [1] Narayan, R.; Saltzberg, M.; Epps, T. H., III; **Korley, L.**; Trump, P. V.; Powell, B.; Kettner, D.; Zieler, H.; Atkinson, D.; *Industrial Biotechnology Journal* **2020** (Roundtable Discussion), Virtual Congressional Education Briefing: End of Life for Bioplastics; DOI:10.1089/ind.2020.29228.rna
63. [43] **Korley, L.T.J.**; Epps, T.H., III; Helms, B.A.; Ryan, A.J.; Polymer Upcycling – Adding Value and Tackling Circularity, *Science* **2021**, 373, 66–69, *Invited Article*; DOI: 10.1126/science.abg4503
64. [3] Amitrano, A.; Mahajan, J.S.; **Korley, L.T.J.**; Epps, T.H., III; Estrogenic activity of lignin-derivable alternatives to bisphenol A assessed via molecular docking simulations, *RSC Advances* **2021**, 11, 22149-22158; DOI:10.1039/D1RA02170B
65. [9] Vance, B.C.; Kots, P.A.; Wang, C.; Hinton, Z.R.; Quinn, C.M.; Epps, T.H., III; **Korley, L.T.J.**; Vlachos, D.G.; Single Pot Catalyst Strategy to Branched Products via Adhesive Isomerization and Hydrocracking to Polyethylene over Platinum Tungstated Zirconia, *Applied Catalysis B: Environmental* **2021**, 120483; DOI:10.1016/j.apcatb.2021.120483

66. [0] Van de Voorde, K. M.; **Korley, L.T.J.**; Pokorski, J.P.; Confinement and Composition Effects on the Degradation Profile of Extruded PLA/PCL Nonwoven Fiber Blends, *ACS Applied Polymer Materials* **2021**, 3, 3878–3890; DOI: 10.1021/acsapm.1c00454
67. [0] Jang, Daseul; Thompson, C.T.; Chatterjee, S.; **Korley, L.T.J.**; Engineering bio-inspired peptide-polyurea hybrids with thermoresponsive shape memory behaviour, *Molecular Systems Design & Engineering* **2021**, 6, 1003-1015, *Invited Article*; DOI: 10.1039/D1ME00043H
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69. [0] Epps, T.H., III; **Korley, L.T.J.**; Yan, T.; Beers, K.L.; Burt, T.M.; Sustainability of Plastics: The Many Routes to Materials Life-Cycle Management, *JACS Au* **2022**, 2, 1, 3-11, *Invited Article*; DOI: 10.1021/jacsau.1c00191
70. [1] **Korley, L.T.J.**; Ware, T. H.; Introduction to Special Topic: Programmable liquid crystal elastomers, *Journal of Applied Physics* **2021**, 130, 220401; DOI:10.1063/5.0078455
71. [0] Redondo, A.; Mortensen, N.; Djeghdi, K.; Jang, D.; Ortuso, Roberto; Weder, C.; **Korley, L.T.J.**; Steiner, U.; Gunkel, I. Comparing percolation and alignment of cellulose nanocrystals for the reinforcement of polyurethane nanocomposites, *ACS Applied Materials and Interface* **2022**, 14, 5, 7270–7282; DOI: 10.1021/acsami.1c21656
72. [0] Pandala, N.; LaScola, M.; Hinton, Z.R.; **Korley, L.T.J.**; Lavik, E. Finding the sweet spot: a library of hydrogels with tunable degradation for tissue model development; *Journal of Materials Chemistry B*, **2022**, 10, 2194-2203; DOI: 10.1039/D1TB02436A
73. [0] Hinton, Z.R.; Talley, M.R; Kots, P.A.; Le, A.V.; Zhang, T.; Mackay, M.E.; Kunjapur, A.M; Bai, P.; Vlachos, D.G.; Watson, M.P.; Berg, M.C.; Epps, T.H., III; **Korley, L.T.J.** Innovations Toward the Valorization of Waste Plastics, *Annual Review of Materials Research*, **2022**, 52, Volume 52, 249-280, *Invited Article*; DOI: 10.1146/annurev-matsci-081320-032344

Submitted

1. Kim, D.; Hinton, Z.R.; Bai, P.; **Korley, L.T.J.**; Epps, T.H., III; Lobo, R.F.; Metathesis, Molecular Redistribution of Alkanes, and the Chemical Upgrading of Low-Density Polyethylene, *Applied Catalysis B – Environmental*, December 2021
2. Wu, C.; Zhang, X.; Mahajan, J.S.; **Korley, L.T.J.**; Epps, T.H., III; Reduced genotoxicity of lignin-derivable replacements to bisphenol A studied using in silico, in vitro, and in vivo methods, *Mutation Research - Genetic Toxicology and Environmental Mutagenesis*, April 2022
3. Hinton, Z.R.; Kots, P.A.; Vlachos, D.G.; Berg, M.C.; Epps, T.H., III; **Korley, L.T.J.**; Antioxidant-Induced Catalyst Transformations in the Hydrocracking of Polyethylene Waste, *Green Chemistry*, July 2022

4. Velasquez, S.T.R.; Jang, D.; Jenkins, P.; Liu, P.; Yang, L.; **Korley, L.T.J.**; Bruns, N.; "Peptide-Reinforced Amphiphilic Polymer Conetworks" has been received by journal *Advanced Functional Materials*, *Advanced Functional Materials*, June 2022

Intellectual Property (Patents, Invention Disclosures) [#] citations as of May 9, 2022

1. [4] **Korley, L. T.**; Stone, D.A.; Wnek, G. E.; Wanasekara, N.D. "Polymer composite and method of forming same", US 9,797,075 B2, October 24, 2017
2. [2] **Korley, L. T.**; Wnek, G. E.; Jordan, A.; "Fiber reinforced hydrogels and methods of making same", US 10,286,585 B2, May 14, 2019
3. Epps, III, T.; **Korley, L.T.J.**; Green, M.; "Bio-Based Polysulfones and Uses Thereof", Invention Disclosure, May 21, 2019
4. Nandi, M.; O'Dea, R.; Epps, III, T.; **Korley, L.T.J.**; "Depolymerization of Polyurethanes: Regeneration of Isocyanates Via Chemical Recycling", Invention Disclosure, March 9, 2022

Invited Conference Presentations

1. TA Instruments Users Meeting, "Elucidating Structure-property Relationships in Elastomers, Nanocomposites, and Multi-layered Films: A Macro@CWRU Perspective". Thermal Analysis Session, May 5, 2008. **Invited Speaker**
2. American Chemical Society, PMSE Young Investigator Symposium, San Francisco, CA. "Bio-inspired Strategies for Mechanical Enhancement", March 24, 2010. **Invited Speaker**
3. First Annual Meeting of NSF's ENG/BRIGE Principal Investigators, NSF, Arlington, VA. August 1-3, 2010. **Invited Speaker**
4. University of Minnesota/IPrime Toughness Workshop, Minneapolis, MN, "Bio-inspired Strategies for Mechanical Enhancement", January 14, 2010. **Invited Speaker**
5. Gordon Conference: Polymers, Mount Holyoke College, South Hadley, MA. "Bio-inspired design of mechanically-enhanced materials", June 14, 2011. **Invited Speaker**
6. ACS National Meeting, Denver, CO. Session: Function through Macromolecular Assembly, "Bio-inspired fillers for mechanical enhancement", August 31, 2011. **Invited Speaker**
7. ACS National Meeting, Denver, CO. Session: Symposium in Memory of Professor Anne Hiltner, "Combining forced-assembly and self-assembly to generate mechanically-enhanced, multi-functional materials", August 31, 2011. **Invited Speaker**
8. APS, Boston, MA. "Nature-inspired fillers for mechanical enhancement", March 2012. **Invited Speaker**
9. TA Instruments Users Meeting, "Elucidating Structure-property Relationships in Elastomers, Nanocomposites, and Multi-layered Films: A Macro@CWRU Perspective". Thermal Analysis Session, April 30, 2012. **Invited Speaker**
10. IUPAC World Polymer Congress, "Mechanical tuning in bio-inspired polymer nanocomposites", June 24-29, 2012. **Invited Speaker**
11. "Towards Mechanically-tunable Materials Inspired by Nature", 244th ACS National Meeting, Philadelphia, PA. Polymeric Biomaterials Symposium, August 2012. **Invited Speaker**
12. NEO Microscopy Meeting, "Lessons from Nature: Tuning Mechanics in Polymeric Materials", February 20, 2013. **Invited Speaker**
13. 245th ACS National Meeting, New Orleans, LA, "Reinforcement of bio-inspired elastomers via control of secondary structure", April 7-11, 2013. **Invited Speaker**
14. 245th ACS National Meeting, New Orleans, LA, "Multilayer co-extrusion as a platform for combining forced assembly and self-assembly", April 7-11, 2013. **Invited Speaker**

15. 245th ACS National Meeting, New Orleans, LA, “From REU student to professor: The role of mentoring in the polymer science and engineering”, April 7-11, 2013. **Invited Speaker.**
16. University of Philippines, Diliman, Institute of Chemistry, MACROManila, “Tailoring mechanics via lessons from nature”, May 22-23, 2013. **Invited Speaker**
17. CWRU, MACRO Frontiers 2013, “Mechanical tuning in bio-inspired polymer nanocomposites”, June 6-8, 2013. **Invited Speaker**
18. 246th ACS National Meeting, PMSE: Bioconjugates and Hybrid Biomaterials, Indianapolis, IN, “Polymer-peptide hybrids: Tuning mechanics via secondary structure”, September 8-12, 2013. **Invited Speaker**
19. Polymers for Advanced Technologies (PAT) 2013, Berlin, Germany, “Designer materials: Taking cues in mechanics from Nature”, September 29 – October 3, 2013. **Invited Speaker & Nominated, Young Talent Award (1 of 6 internationally) Polymers for Advanced Technologies, 2013**
20. 3rd Annual Chinese Chemical Society – Polymer Division/ACS-PMSE Joint Symposium, Shanghai, China, “Multilayer co-extrusion as a platform for combining forced assembly and self-assembly”, October 15, 2013. **Invited Speaker**
21. 3rd Annual Chinese Chemical Society – Polymer Division/ACS-PMSE Joint Symposium, Tsinghua University, Beijing, China, “Multilayer co-extrusion as a platform for combining forced assembly and self-assembly”, October 17-18, 2013. **Invited Speaker**
22. AIChE, San Francisco, CA. *Emerging Areas in Polymer Science and Engineering Plenary session*, “Tunable and Responsive Polymer Nanocomposites Inspired By Nature”, November 3-8, 2013. **Invited Plenary Speaker**
23. 247th ACS National Meeting, PMSE: Supramolecular Assembly and Gelation in Organic Solvents, Dallas, TX., “Controlled dispersion and inherent percolation in polymer composites via supramolecular assembly and filler design”, March 16, 2014. **Invited Speaker**
24. 248th ACS National Meeting, PMSE: Functional Supramolecular Polymers, San Francisco, CA. “Functional fillers (and architectures) for mechanical enhancement of polymeric systems”, August 12, 2014. **Invited Speaker**
25. 2nd International Conference on Bioinspired and Biobased Chemistry & Materials, Nice, France. “Polymer-Peptide Hybrids: Tuning Mechanics via Nature’s Building Blocks”, October 15, 2014.
26. Conference on Deformation, Yield and Fracture in Polymers (DYFP2015), Rolduc Abbey, Kerkrade, NL, “Exploiting the structural diversity in Nature as a path towards mechanical enhancement”, April 2, 2015. **Invited Speaker**
27. 250th ACS National Meeting, POLY: Herman Mark Scholars Award Symposium in Honor of Stuart Rowan, Boston, MA, “Harnessing the power of phase interactions - tailoring mechanics via supramolecular motifs”, August 16, 2015. **Invited Speaker**
28. 250th ACS National Meeting, POLY: Henry A. Hill Centennial Symposium: Innovation in Polymer Science, Boston, MA. “New Fabrication Strategy toward functional fiber mats and composites”, August 18, 2015. **Invited Speaker**
29. 250th ACS National Meeting, POLY: Herman Mark Young Scholars Award Symposium in Honor of Bradley Olsen, Boston, MA, “Polymer-peptide hybrids: tuning mechanics via nature’s building blocks”, August 19, 2015. **Invited Speaker**
30. AIChE, Salt Lake City, Utah. *Mechanics and Structure in Polymers*, “From Multilayer Films to Nanoscale Fibers: Probing the Connection Between Assembly and Mechanics, November 10, 2015. **Invited Speaker**
31. MRS Fall Meeting, H11 Multifunctionality in Polymer-Based Materials, Gels and Interfaces, Boston, MA. “Exploiting structural diversity in Nature: Supramolecular Associations and

- Hierarchical Organization Drive Mechanical Tunability in Polymer Composites and Networks”, December 4, 2015. **Invited Speaker**
32. Pacific Polymer Conference 14 (PPC 14), 3B – Advanced Processing, Kauai, Hawaii, “New fabrication strategy toward functional fiber mats and composites”, December 11, 2015. **Invited Speaker**
 33. Pacificchem, Current Polyurethane Science, Honolulu, Hawaii, “Polyurethane-peptide hybrids: Hierarchy and mechanics inspired by nature”, December 19, 2015.
 34. Academic Research and Leadership Network, 2016 Research Symposium, MIT, Cambridge, MA, “Bio-inspired Approaches to Mechanical Tuning: Fiber Innovations”, March 25, 2016. **Invited Speaker**
 35. GRC Bioinspired Materials, Les Diablerets Conference Center, Les Diablerets, Switzerland, “Exploiting the structural diversity in Nature: mechanical implications in elastomers, composites, and fibers”, June 5-10, 2016. **Invited Speaker**
 36. 252nd ACS Fall National Meeting, Division of Polymer Chemistry, Advanced Functional Biopolymers and Biomaterials, Philadelphia, PA. “Toward fibrous biomaterial scaffolds: Manufacturing and functionalization strategies”, August 21, 2016. **Invited Speaker**
 37. 252nd ACS Fall National Meeting, Division of Colloid and Surface Chemistry: Synergy at the Bio-Nano Interface, Philadelphia, PA. “Tuning mechanics via structural interplay in polymer-peptide hybrids”, August 21, 2016. **Invited Speaker**
 38. Biennial Meeting of the GDCh-Division Macromolecular Chemistry, Halle, Germany. “Utilizing concepts of mechanics, transport, and assembly in Nature – towards responsive materials”, September 11-13, 2016. **Invited Speaker (1 of only 2 US invitees)**
 39. MRS Fall, Boston, MA. “Inspired by Nature: scalable fabrication of functional fiber scaffolds and fiber-reinforced hydrogels”, November 27-30, 2016. **Invited Speaker**
 40. ACS Layered Polymeric Systems Conference, Pacific Grove, CA. “Transforming layered materials into mechanically-robust fibers and hydrogels”, February 21-24, 2017. **Invited Speaker**
 41. APS, New Orleans, LA. “Structural Interplay - Tuning Mechanics in Peptide-Polyurea Hybrids”, March 13-17, 2017. **Invited Speaker**
 42. 1st Pan-American Polymer Science Conference, São Paulo, Brazil. “Mechanical tuning in Nature-inspired elastomers and gels, March 22-24, 2017. **Invited Speaker**
 43. 3rd Functional Polymeric Material conference, Rome, Italy. “Utilizing concepts of mechanics, transport, and assembly in Nature – towards responsive, fibrous materials”, July 7-10, 2017. **Invited Speaker**
 44. APS, Los Angeles, CA. Symposium: Lessons from Biological Soft Materials and Their Applications, “Hierarchy and architecture - tailoring physical associations toward functional networks and gels”, March 5-9, 2018. **Invited Speaker**
 45. SPIE Smart Structures/NDE Symposium, Bioinspiration, Biomimetics, and Bioreplication VII, “Utilizing concepts of mechanics, transport, and assembly in nature: towards responsive materials”, March 4-8, 2018. **Invited Speaker**
 46. ACS, New Orleans, LA. ACS Award in Applied Polymer Science: Symposium in Honor of Paula T. Hammond, “Hierarchy-mediated mechanics in peptide-polyurea hybrids”, March 18-22, 2018. **Invited Speaker**
 47. 4th Annual Functional Polymeric Materials Conference, Nassau, Bahamas. “Manipulating phase interactions and mechanics in supramolecular systems”, June 5-8, 2018. **Invited Speaker**
 48. NOBCCChE, Orlando, FL. “Programmable responses in hygromorphic bilayer composites”, September 17-20, 2018. **Invited Speaker**
 49. ACS POLY 2018 Polycondensation Workshop, Alexandria, VA. “Manipulating hierarchy, mechanics, and function in polyurea-peptide hybrids”, October 14-17, 2018. **Invited Speaker**

50. International Symposium on Stimuli-Responsive Materials, Windsor, CA. “Engineering Responsive, Bilayer Composites via Strategic Control of Fiber Alignment and Interfacial Assembly”, October 21-23, 2018. **Invited Speaker**
51. AIChE, MSED, Polymer Processing and Rheology Session, Pittsburgh, PA. “Transforming Layered Materials into Mechanically-Robust Fibers and Hydrogels”, October 28-November 2, 2018. **Invited Speaker**
52. NE Section ACS/NE Region NOBCChE, Boston, MA. “Utilizing concepts of mechanics, transport, and assembly in Nature – towards responsive materials via strategic control of architecture and alignment”, February 28, 2019. **Invited Speaker**
53. ACS, Orlando, FL. Polymers & Biomimicry, “Biologically-inspired supramolecular systems: architecture and mechanics”, March 31-April 4, 2019. **Invited Speaker**
54. ACS, Orlando, FL. Polymer Bioconjugates, “Manipulating hierarchy, mechanics, and function in polyurea-peptide hybrids”, March 31-April 4, 2019. **Invited Speaker**
55. Polymer GRS, Mount Holyoke, MA. June 8-9, 2019. **Invited Keynote Speaker**
56. Polymer GRC, Mount Holyoke, MA. “Interplay of Assembly, Alignment, and Architecture in Biologically-Inspired, Polymer Composites. June 9-14, 2019. **Invited Speaker**
57. ACS, San Diego, CA. PMSE Future Faculty Symposium, “Nature-inspired strategies for reinforcement of polymer gels and composites”. August 25-29, 2019. **Invited Keynote Speaker**
58. XVIII Brazilian MRS Meeting 2019, Symposium B - Biological, biopolymer-based and bio-inspired materials, “Gradient Architectures and Tunable Mechanics in Biologically-inspired, Supramolecular Semi-Interpenetrating Networks”, September 22 – 26, 2019. **Invited Speaker**
59. NOBCChE, St. Louis, MO, Lloyd N. Ferguson Award Lecture, “Transforming Layered Materials into Mechanically-Robust Fibers and Hydrogels”, November 20, 2019. **Invited Speaker**
60. APS 2020, Denver, Colorado, Responsive Polymers, Soft Materials, and Hybrids, “Silk-inspiration: hierarchy, assembly, and mechanics in polyurea-polypeptide hybrids”, March 2-6, 2020. **Invited Speaker (Canceled)**
61. APS 2020, Denver, Colorado, Dillon Medal Symposium in Honor of Rodney Priestley, “Exploiting supramolecular associations in interpenetrating networks and elastomers”, March 2-6, 2020. **Invited Speaker (Canceled)**
62. 2nd Pan American Congress of Nanotechnology, “Transforming Layered Materials: Mechanically-Robust, Films, Fibers and Hydrogels”, March 4-7, 2020. **Plenary Speaker (Withdrawn)**
63. ACS, Philadelphia, PA. US – Israel Joint Symposium, Polymeric Materials: From Synthesis to Application, “Manipulating hierarchy, mechanics, and function in polyurea-peptide hybrids”, March 22-26, 2020. **Invited Speaker (Rescheduled 2021)**
64. ACS, Philadelphia, PA. Bio-Inspired Macromolecular Materials, “Lessons from pine cones: Structural hierarchy and programmable actuation in hygromorphic composites”, March 22-26, 2020. **Invited Speaker (Canceled)**
65. ACS, Philadelphia, PA. Next Generation of Functional Polymeric Materials: Correlating Structure, Property & Application, “Transforming layered materials into mechanically-robust fibers and hydrogels”, March 22-26, 2020. **Invited Speaker (Rescheduled 2022)**
66. AIChE, Women in Chemical Engineering (WIC Symposium), “Bio-inspiration: A Tale of Dreams Realized”, November 14, 2020. **Keynote Speaker**
67. MRS Joint Spring and Fall Meeting, Boston, MA. F.SM01: Lessons from Nature—From Biology to Bioinspired Materials “Exploiting supramolecular associations in interpenetrating networks and elastomers”, November 28 – December 4, 2020. **Invited Speaker**

68. American Association for the Advancement of Science (AAAS) Annual Meeting, Sustaining a Passion for Sustainable Materials: From Molecules to Manufacturing Session, February 8, 2021. **Invited Speaker**
69. Adhesion Society Annual Meeting, “Hierarchy and Architecture - Tailoring Physical Associations Toward Functional Networks”, February 24, 2021. **Plenary Speaker**
70. APS 2021, Virtual Meeting, Dillon Medal Symposium in Honor of Rodney Priestley, “Exploiting supramolecular associations in interpenetrating networks and elastomers”, March 15, 2021. **Invited Speaker**
71. ACS, Philadelphia, PA. Bio-Inspired Macromolecular Materials, “Lessons from pine cones: Structural hierarchy and programmable actuation in hygromorphic composites”, April 8, 2021. **Invited Speaker**
72. Middle Atlantic Regional Meeting of the American Chemical Society 2021, June 11, 2021. **Plenary Speaker**
73. MSDE Symposium 2021: Frontiers in Molecular Engineering, Panel Discussion on Polymer Upcycling and Sustainability, June 17, 2021. **Invited Panelist**
74. 15th International Conference on Materials Chemistry, Royal Chemical Society, Dublin, Ireland. “Bio-inspired and Sustainable Design: Towards Functional Materials”, July 12-15, 2021. **Keynote Speaker**
75. ACS, Atlanta, GA. “Manipulating hierarchy, mechanics, and function in polyurea-peptide hybrids”, ACS Macro Letters/Biomacromolecules/Macromolecules Young Investigator Award, August 2021. **Invited Speaker**
76. National Academies of Sciences, Engineering, and Medicine (NASEM), Convergent Manufacturing - A Future of Additive, Subtractive, and Transformative Manufacturing. “Bio-inspiration”, November 15, 2021. **Invited Panelist (virtual)**
77. ACS, San Diego, CA. “Tunable mechanics enabled by the molecular design of hierarchical polymer-peptide hybrids”, Molecular Design of Polymers with Multi-scale Mechanical Properties, March 20, 2022. **Invited Speaker**
78. ACS, San Diego, CA. “Transforming layered materials into mechanically-robust fibers and fiber-reinforced hydrogels”, Next Generation of Functional Polymeric Materials: Correlating Structure, Property, and Application: Tailored Processes for Advanced Polymeric Materials, March 22, 2022. **Invited Speaker**
79. MRS, Honolulu, HI. “Harnessing the Diversity of Biomass in the Design of Performance-Advantaged, Polymeric Materials”, Sustainable Polymeric Materials by Green Chemistry—Degradability and Resilience, May 9, 2022. **Invited Speaker**
80. Polymer Physics GRC, Mount Holyoke College, MA. “Structural interplay as a pathway towards functional biomaterials”, July 24-29, 2022. **Invited Speaker**
81. Bioinspired Materials Conference, Andermatt, Switzerland, “Hierarchical tuning as a bio-inspired pathway for functional materials design”, August 7-12, 2022. **Invited Speaker**
82. 93rd Annual Meeting of the Society of Rheology, Chicago, IL, “Material innovations inspired by Nature: Utilizing concepts of mechanics, transport, assembly, and sustainability”, October 10, 2022. **Plenary Speaker**
83. 2022 AIChE Annual Meeting, Phoenix, AZ, Area 8, A Plenary: Emerging Areas in Polymer Science and Engineering I, “Tackling the Plastics Waste Challenge Via an Interdisciplinary Framework: Catalytic Innovations, Material Complexity, and Sustainable Polymer Design”, November 15, 2022. **Plenary Speaker**

Lectures, Seminars, and Panels (July 2007-Present)

1. NASA Glenn, Cleveland, OH, “Manipulating Self-assembly Behavior in Nanostructured Materials”, November 28, 2007. **Invited Speaker**

2. Rochester Institute of Technology, Department of Chemistry, "Manipulating Self-assembly Behavior in Nanostructured Materials", October 31, 2007. **Invited Speaker**
3. Lubrizol Corporation, "Mechanically-enhanced, Multi-functional Elastomers", December 12, 2008. **Invited Speaker**
4. Cleveland Society of Applied Spectroscopy, "Taking Shape: Confinement-induced Assembly of Block Copolymer Systems", February 26, 2009. **Invited Speaker**
5. Ohio Northern University, Department of Chemistry, Ada, OH, "Mechanically-enhanced, Multi-functional Materials", October 29, 2009. **Invited Speaker**
6. American Chemical Society, Columbus, OH, Local Section, "Bio-inspired Strategies for Material Toughening", September 21, 2010. **Invited Speaker**
7. 3M Technical Center, Minneapolis, MN, "Bio-inspired Strategies for Mechanical Enhancement", September 28, 2010. **Invited Speaker**
8. Iowa State University, Department of Material Science and Engineering, Ames, IA, "Mechanically-tunable Materials Inspired by Nature", December 2, 2010. **Invited Speaker**
9. P&G, Cincinnati, OH. "Exploring Barrier Properties of Liquid Crystalline Multilayer Films", November 19, 2010. **Invited Speaker**
10. Case Western Reserve University, Department of Chemical Engineering, Cleveland, OH, "Mechanically-tunable Materials Inspired by Nature", December 9, 2010. **Invited Speaker**
11. Northeastern University, Department of Chemical Engineering, Boston, MA. "Mechanically-Tunable Materials Inspired from Nature". September 19, 2011. **Invited Speaker**
12. DuPont Experimental Station, DuPont, Wilmington, DE. "Mechanically-Tunable Materials Inspired from Nature", November 2, 2011. **Invited Speaker**
13. University of Delaware, Department of Chemical Engineering, Newark, DE. "Mechanically-Tunable Materials Inspired from Nature", December 15, 2011. **Invited Speaker**
14. Andrews University, Department of Chemistry/Biochemistry, Berrien Springs, MI, February 2, 2012. **Invited Speaker**
15. Carnegie Mellon University, Department of Chemistry, Pittsburgh, PA. "Mechanically-Tunable Materials Inspired from Nature", March 8, 2012. **Invited Speaker**
16. University of Akron, Integrated Bioscience, Department of Biology, Akron, OH. "Mechanically-Tunable Materials Inspired from Nature", April 20, 2012. **Invited Speaker**
17. MIT, Program in Polymer Science and Technology (PPST), "Towards Mechanically-tunable Materials Inspired by Nature", May 16, 2012. **Invited Speaker**
18. University of Akron, Department of Polymer Engineering. "Lessons from Nature: Tuning Mechanics in Polymeric Materials", November 16, 2012. **Invited Speaker**
19. Syracuse University, Department of Biomedical Engineering. "Lessons from Nature: Tuning Mechanics in Polymeric Materials", December 5, 2012. **Invited Speaker**
20. 13th Annual Japanese-American Kavli Frontiers of Science Symposium, Beckman Center, Irvine, CA. November 30-December 2, 2012. *Poster*
21. Kentucky State University, Department of Chemistry, "Tailoring mechanics via combining forced assembly with self-assembly", February 7, 2013. **Invited Speaker**
22. University of Michigan, 37th Annual Symposium of the Macromolecular Science and Engineering Program, "Tunable Materials Inspired by Nature", October 24, 2013. **Invited Speaker**
23. Stanford University, Department of Materials Science and Engineering, "Design rules from Nature for new material development", November 14, 2013. **Invited Speaker**
24. University of Southern Mississippi, School of Polymers and High Performance Materials, "Lessons from Nature: Tuning Mechanics in Polymeric Materials", November 20, 2013. **Invited Speaker**
25. University of South Florida, Department of Chemical and Biomedical Engineering, "Lessons from Nature: Tuning Mechanics in Polymeric Materials", March 28, 2014. **Invited Speaker**

26. Université Savoie, Campus Scientifique, France. "From multilayer films to nanoscale fibers: probing the connection between assembly and mechanics, October 13, 2014. **Invited Speaker**
27. Kent State University, Liquid Crystal Institute, "Hierarchical organization in polymer thin films – towards enhanced mechanics and barrier properties", April 22, 2015. **Invited Speaker**
28. Cornell University, Department of Chemical and Biomolecular Engineering, Symposium in Honor of Prof. Claude Cohen, "Exploiting the structural diversity in Nature as a path towards mechanical enhancement", May 21, 2015. **Invited Speaker**
29. CWRU Macro/Brazil Workshop, Rio de Janeiro, "Exploiting the structural diversity in Nature as a path towards mechanical enhancement", July 11- July 13, 2015. **Invited Speaker**
30. NCCR Bio-inspired Materials Annual Center Conference 2015, Murten-Muntelier, Switzerland, "Polymer-peptide hybrids: tuning mechanics via nature's building blocks", September 14, 2015. **Invited Speaker**
31. Carnegie Mellon University, Department of Chemical Engineering, "Exploiting the structural diversity in Nature as a path toward mechanical enhancement", September 29, 2015. **Invited Speaker**
32. The Ohio State University, Department of Chemistry and Biochemistry, Columbus, OH. "Exploiting the structural diversity in Nature as a path towards mechanical enhancement", February 8, 2016. **Invited NOBCCChE Speaker**
33. University of Delaware, Department of Chemical and Biomolecular Engineering, Newark, DE. "Exploiting the structural diversity in Nature as a path towards mechanical enhancement", February 26, 2016. **Invited Speaker**
34. MIT Lincoln Laboratory, Lincoln, MA. "Bio-inspired Approaches to Mechanical Tuning", March 10, 2016. **Invited Speaker**
35. University of Massachusetts, Amherst. Graduate Students for Diversity in Science and Engineering (GSDSE) "Bio-inspired Approaches to Mechanical Tuning", April 21-22, 2016. **Invited Speaker**
36. MIT Program in Polymers and Soft Matter (PPSM), Cambridge, MA. "Utilizing concepts of mechanics, transport, and assembly in Nature – towards responsive materials", May 4, 2016. **Invited Speaker**
37. MIT, ICEO MLK Diversity Luncheon, "Bio-inspired Mechanics", May 18, 2016. **Invited Speaker**
38. Wright Patterson AFRL, "Hygromorphs - transport and mechanics derived from electrospun and gel fiber constructs", November 7, 2016. **Invited Speaker**
39. Cleveland State University, Chemical and Biomedical Engineering Department, "Utilizing concepts of mechanics, transport, and assembly in Nature – towards responsive materials via fibrous architectures", January 26, 2017. **Invited Speaker**
40. Georgia Institute of Technology, Chemical and Biomolecular Engineering Department, "Towards responsive, fibrous materials via a bio-inspired framework", September 20, 2017. **Invited Speaker**
41. Florida State University-Florida Agricultural and Mechanical University, Chemical and Biomedical Engineering Department, "Towards responsive, fibrous materials via a bio-inspired framework", December 1, 2017. **Invited Speaker**
42. University of Delaware, Center for Molecular and Engineering Thermodynamics, "Transforming Layered Materials into Mechanically-robust Fibers and Hydrogels", April 16, 2018. **Invited Speaker**
43. Arizona State University, Chemical Engineering Department, "Manipulating Architecture and Mechanics via Bio-inspired Design: Gels, Fibers, and Composites", November 5, 2018. **Invited Speaker**
44. Gore Corporation, Newark, DE, January 16, 2019. **Invited Speaker**

45. Princeton University, Chemical and Biological Engineering, “Manipulating Architecture and Mechanics via Bio-inspired Design: Gels, Fibers, and Composites”, April 24, 2019. **Invited Speaker**
46. Johns Hopkins University, Department of Chemistry, “Silk-inspiration: hierarchy, assembly, and mechanics in polyurea-polypeptide hybrids”, May 7, 2019. **Invited Speaker**
47. University of Pennsylvania, Polymer Program. “Manipulating Architecture and Mechanics via Bio-inspired Design: Fibers, Gels, and Composites”, November 22, 2019. **Invited Speaker**
48. Arkema, “Transforming Layered Materials into Mechanically-Robust Fibers and Hydrogels”, January 16, 2020. **Invited Speaker**
49. Braskem, “Transforming Layered Materials into Mechanically-Robust Fibers and Hydrogels”, October 9, 2020. **Invited Speaker**
50. University of Pennsylvania, Chemical and Biomolecular Engineering. “Bio-inspired pathways to manipulating architecture and mechanics in polymeric materials”, December 9, 2020. **Invited Speaker**
51. National Science Foundation (NSF) Bioeconomy Distinguished Lecture Series. “Bio-inspired and Sustainable Design: Towards Functional Materials”, January 14, 2021. **Invited Speaker**
52. Georgetown University, Department of Physics. “Bio-inspired pathways to manipulating architecture and mechanics in polymeric materials”, February 2, 2021. **Invited Speaker**
53. Cornell University, Department of Materials Science and Engineering. “Bio-inspired pathways to manipulating architecture and mechanics in polymeric materials”, April 22, 2020. **Invited Speaker**
54. University of California, Berkeley, Department of Chemical and Biomolecular Engineering, “Manipulating Architecture and Mechanics via Bio-inspired Design”, May 19, 2021. **Invited Speaker**
55. University of California, Irvine, Department of Chemical and Biomolecular Engineering, “Manipulating Architecture and Mechanics via Bio-inspired Design”, May 21, 2021. **Invited Speaker**
56. University of Washington, Molecular Engineering Seminar Series, “Manipulating Architecture and Mechanics via Bio-inspired Design”, May 25, 2021. **Invited Speaker**
57. 3M, “Bio-inspired and Sustainable Pathways to Manipulating Architecture and Mechanics in Polymeric Materials”, August 5, 2021. **Invited Speaker**
58. POLY PMSE Student Chapter Summer Seminar Series, “Silk Inspiration Manipulating Architecture and Mechanics in Polymer Peptide Hybrids”, August 26, 2021. **Invited Speaker**
59. Dow Chemical, Technical Community Organization (TCO) External Seminar Series, “Bio-inspired and Sustainable Design: Towards Functional Materials”, September 9, 2021. **Invited Speaker**
60. University of Wisconsin, Madison, Center for the Chemical Upcycling of Waste Streams, “Tackling the plastics waste challenge via catalytic innovations, macromolecular chemistry, sustainable feedstocks, and materials manufacturing”, October 28, 2021. **Invited Speaker**
61. University of California, Merced. Department of Materials Science and Engineering, “Bio-inspired and Sustainable Design: Towards Functional Materials”, November 2, 2021. **Invited Speaker**
62. FAMU/FSU, Department of Chemical and Biomedical Engineering, “Bio-inspired Design: Towards Functional Materials”, November 5, 2021. **Invited Speaker**
63. NYU Chemical and Biomolecular Engineering, “Manipulating Architecture and Mechanics via Bio-Inspired Design”, November 19, 2021. **Invited Speaker**
64. Virginia Tech MII Solvay Seminar, “Bio-inspired Design: Towards Functional Materials”, December 1, 2021. **Invited Speaker**
65. 16th 6th Northeast Complex Fluids and Soft Matter (NCS) workshop, “Hierarchical pathways towards functional polymeric systems”, January 14, 2022. **Invited Keynote Speaker**

66. University of Minnesota, Department of Chemistry, "Bio-inspired and Sustainable Design: Towards Functional Polymeric Materials", February 8, 2022. **Invited Speaker**
67. UT Austin - Texas Distinguished Faculty Lectureship, Chemical Engineering, February 22, 2022. **Invited Speaker (Rescheduled)**
68. University of Illinois, Urban-Champaign, Department of Materials Science and Engineering, Department of Chemical and Biomolecular Engineering, "Bio-inspired and Sustainable Design: Towards Functional Materials", March 7, 2022. **Invited Speaker**
69. Lehigh University, Humphrey Distinguished Lecture in Biomolecular Engineering, "Bio-inspired Design: Towards Functional Polymeric Materials", April 20, 2022. **Invited Speaker**
70. University of Sheffield, Department of Chemistry, "Bio-inspired and Sustainable Design: Towards Functional Materials", May 11, 2022. **Invited Speaker**
71. U.S. Naval Research Laboratory, Luminary Speaker Series HBCU/MI Internship Program, "Bio-inspired and Sustainable Design: Towards Functional Materials", July 13, 2022. **Invited Speaker**
72. Michigan State University, Chemical Engineering & Materials Science Department, "TBD", October 6, 2022. **Invited Speaker**
73. International Symposium on Stimuli-Responsive Materials, Windsor, CA, "TBD", October 23-25, 2022. **Plenary Speaker**
74. University of Maryland, College Park, Bioengineering Department, "TBD", November 4, 2022. **Invited Speaker**
75. UT Austin-Texas Distinguished Faculty Lectureship, Department of Chemical Engineering, "TBD", November 29, 2022. **Invited Speaker**
76. University of Notre Dame, Chemical and Biomolecular Engineering, "TBD", December 6, 2022. **Invited Speaker**
77. Tufts University, Chemical and Biological Engineering, "TBD", December 12, 2022. **Invited Speaker**
78. University of Southern Mississippi, School of Polymer Science and Engineering, "TBD", February 8, 2023. **Invited Speaker**
79. University of Florida, Materials Science and Engineering Department, "TBD", April 4, 2023. **Invited Speaker**

Panels and Workshops (Invited)

1. National Science Foundation (NSF) Biomaterials Workshop 2012 – Thin Films and Interfaces (Invited Participant)
2. National Science Foundation (NSF) Polymer Workshop 2016 –Societal Needs
3. National Science Foundation (NSF) Design Engineering Materials Workshop 2016
4. National Academies of Sciences, Engineering, and Medicine's draft report, "Frontiers of Materials Research: A Decadal Survey. *Reviewer*
5. US-UK Catalysis Workshop: Catalysis for the Circular Carbon Economy. March 10-11, 2021. *Invited Participant*
6. Sustainable Materials and Manufacturing Square Table, April 28-29, 2021. *Subject Matter Expert*
7. MSDE Symposium 2021: Frontiers in Molecular Engineering, June 17-18, 2021. *Panelist: Polymer upcycling and sustainability*
8. National Academies of Sciences, Engineering, and Medicine (NASEM), Workshop: Convergent Manufacturing -- A Future of Additive, Subtractive, and Transformative Manufacturing, November 15, 2021. *Panelist: Multifunctional Materials Design*

Contributed Presentations

1. American Institute of Chemical Engineers Annual Meeting; November 2009, Nashville, TN. *Speaker* – T.B. Abernathy; “Confinement of Elastomeric Block Copolymers via Forced Assembly”
2. American Institute of Chemical Engineers Annual Meeting; November 2009, Nashville, TN. *Speaker* – L.T.J. Korley; “Confinement-Induced Morphologies in Electrospun and Templated Block Copolymer/Polymer Derived Ceramic Precursor Nanocomposites”
3. American Institute of Chemical Engineers Annual Meeting; November 2009, Nashville, TN. *Speaker* – D.A. Stone; “Catalytic Thin Films for the Degradation of Organophosphates”
4. American Chemical Society Fall Meeting; August 2010, Boston, MA. *Speaker* – T.M. Burt; “Using Forced Assembly Co-extrusion to Confine the Self-assembly of Elastomeric Block Copolymers”
5. 43rd IUPAC World Chemistry Congress; August 4, 2011, San Juan, PR. *Speaker* – L.T.J. Korley; “Bio-inspired polymer nanocomposites”
6. American Institute of Chemical Engineers Annual Meeting; September 2011, Minneapolis, MN. *Presenter* – T.M. Burt; “Confinement of Elastomeric Block Copolymers via Forced Assembly”
7. XVIth International Congress on Rheology; August 5-10, 2012, Lisbon, Portugal. *Speaker* – L.T.J. Korley; “Hierarchically-assembled Multiblock Copolymers Inspired by Nature”
8. American Chemical Society National Meeting; August 2012, Philadelphia, PA. *Speaker* - J. Casey Johnson; “Bio-inspired, hierarchically-ordered peptidic polyurethane/ureas”
9. American Physical Society; March Meeting 2013, Baltimore, MD. *Speaker* - N. D. Wanasekara; “Utilizing Matrix-Filler Interactions in the Design of Stimuli-Responsive, Mechanically-Adaptive Electrospun Composites”
10. American Chemical Society National Meeting; April 2013, New Orleans, LA. *Speaker* - S. Monemian; “Superior Mechanical Properties of Bio-inspired Polymers through Supramolecular Chemistry”
11. American Physical Society; March Meeting 2014, Denver, CO. *Speaker*– N.D. Wanasekara; “Mechanical tuning of elastomers via peptide secondary structure”
12. Polymer Processing Society, June 2014, Cleveland, OH. *Speaker* – K.-S. Jang – “Thermal stability, miscibility, and self-assembly of liquid crystal/polymer composites for extrusion processing”
13. American Institute of Chemical Engineers, November 2014, Atlanta, GA. *Speaker* – A. M. Jordan; “An Examination of Post-Processing Orientation in Coextruded Poly (ϵ -caprolactone) Fibers”
14. National Technical Association 86th Annual Conference, September 2015, Cleveland, OH. *Speaker* – S.L.M. Alexander, “Synthesis, Modeling, and Rheological Investigation of Polydiacetylene Gels”
15. AIChE Annual Meeting, November 2016, San Francisco, CA. *Speaker* – Alex M. Jordan, “Fiber-Reinforced Hydrogels: In Situ fabrication from Coextruded Polymeric Composites”
16. 255th ACS Meeting, March 2018, New Orleans, LA. *Speaker* -Symone L.M. Alexander, “Molecular gel composites: From solution to solid-state reversibility”
17. 255th ACS Meeting, March 2018, New Orleans, LA. *Speaker* – Chase B. Thompson, “Role of interfacial interactions in the toughening of supramolecular interpenetrating network elastomers”
18. 258th ACS Meeting, Fall 2019, San Diego, CA. *Speaker* – C.B. Thompson, “Bio-inspired supramolecular interpenetrating networks: Impacts of supramolecular confinement on mechanics and stimuli-responsive behavior”
19. 258th ACS Meeting, Fall 2019, San Diego, CA. *Speaker* – K.M. Van de Voorde, “Multilayer coextrusion production of tunable bioresorbable polyester fibers for tissue engineering”

20. 258th ACS Meeting, Fall 2019, San Diego, CA. *Speaker* – Sara T. R. Velasquez, “Tailoring the mechanical properties of bioinspired amphiphilic polymer conetwork composites”
21. ACS Meeting, Spring 2021 Virtual. *Speaker* – D. Jang; “Tuning shape memory response in polymer-peptide hybrids”
22. ACS Mid-Atlantic Regional Meeting, June 2021, Virtual. *Speaker* – F. Klincewicz; “Fabrication of Thermoresponsive Bilayer Hydrogels through Vat Photopolymerization Additive Manufacturing”
23. ACS Meeting, Spring 2022, San Diego, CA. *Speaker* – Z.R. Hinton; “Quantifying Challenges to Valorization Posed by Chemical Additives in Waste Polyethylene”
24. ACS Meeting, Spring 2022, San Diego, CA. *Speaker* – D. Jang; “Interplay of peptide secondary structure, microphase-separated morphology, and shape memory response in bioinspired peptide-polyurea hybrids”
25. North American Catalysis Society Meeting, May 2022, New York, NY. *Speaker* – D. Kim; “Molecular Redistribution of Alkanes and the Chemical Upcycling of Low-Density Polyethylene”

Poster Presentations

1. American Institute of Chemical Engineers Annual Meeting, November 18, 2008, Philadelphia, PA. *Presenter* – T.B. Abernathy; “Using Forced-Assembly Microlayer Co-extrusion to Produce Material Systems with Novel Properties”
2. Research ShowCASE; April 2009, Cleveland, OH. *Presenter* – T.M. Burt; “Confinement of Elastomeric Block Copolymers via Forced Assembly”
3. Central Regional Meeting of the American Chemical Society (CERMACS); May 2009, Cleveland, OH. *Presenter* – T.M. Burt; “Confinement of Elastomeric Block Copolymers via Forced Assembly”
4. Central Regional Meeting of the American Chemical Society (CERMACS); May 2009, Cleveland, OH. *Presenter* – J. Casey Johnson; “Hierarchically Designed Segmented Polyurethanes for High Performance Applications”
5. Central Regional Meeting of the American Chemical Society (CERMACS); May 2009, Cleveland, OH. *Presenter* – N.R. Wheeler; “Enhancing Toughness in a Crosslinked and Telechelic Supramolecular Polymer System”
6. Polymers Gordon Research Conference; June 23, 2009, South Hadley, MA. *Presenter* – L.T.J. Korley; “Mechanically-enhanced, Multi-functional Materials”
7. National Science Foundation Science and Technology Director’s Meeting; August 2010, Arlington, VA. *Presenter* – T.M. Burt; “Confinement of Elastomeric Block Copolymers via Forced Assembly”
8. American Physical Society; March Meeting 2011, Dallas, TX. *Speaker* - N. D. Wanasekara; “Hierarchical assembly of coil-rod-coil peptide-based copolymers”
9. ARVO 2011 Annual Meeting, Visionary Genomics; May 1, 2011. Fort Lauderdale, FL. *Presenter* – L.T.J. Korley; “Electrospun Polymer Micro- and Nanofibers as Biomaterials: Modulation of Optical Properties”
10. Polymers Gordon Research Conference; June 2011, South Hadley, MA. *Presenter* – J. Casey Johnson; “Peptidic Coil-Rod-Coil Block Copolymers: Synthesis and Morphology”
11. PINO (Polymer Initiative of Northeast Ohio) Conference, Case Western Reserve University; June 2011, Cleveland, OH. *Presenter* – N.D. Wanasekara; “Hierarchical assembly of coil-rod-coil peptide-based copolymers”
12. American Physical Society (APS); March Meeting 2012, Boston, MA. *Presenter* - S. Monemian, “Confinement of Block Copolymer Nanocomposites within Nanoporous Templates”

13. Minority Faculty Development Workshop, March 15-18, 2012, Georgia Tech, Atlanta, GA. *Presenter* – L.T.J. Korley; “Bio-inspired Strategies for Mechanical Enhancement” (*Poster Winner*)
14. NSF STC Center for Layered Polymeric Systems Site Visit; April 2012, Cleveland, OH. *Presenter* – A.M. Jordan; “Confinement of Elastomeric Block Copolymers via Forced Assembly Co-extrusion”
15. PINO (Polymer Initiative of Northeast Ohio) Conference, Case Western Reserve University; June 2012, Cleveland, OH. *Presenter* – A.M. Jordan; “Confinement of Elastomeric Block Copolymers via Forced Assembly Co-extrusion”
16. MACRO Alumni Poster Session; September 29, 2012, Cleveland, OH. *Presenter* – S. Monemian; “Block Copolymer-Magnetite Composites”
17. 13th Annual Japanese-American Kavli Frontiers of Science Symposium, Beckman Center, Irvine, CA; November 30 - December 2, 2012. *Presenter* – L.T.J. Korley; “Lessons from Nature: Tuning Mechanics in Polymeric Systems”
18. PINO (Polymer Initiative of Northeast Ohio) Conference; June 2012, Cleveland, OH. *Presenter* – A.M. Jordan; “Forced assembly coextrusion as an approach to investigate confinement effects in phase separated block copolymers”
19. NSF STC Center for Layered Polymeric Systems Site Visit; April 2013, Cleveland, OH. *Presenter* – A. M. Jordan; “Forced assembly coextrusion as an approach to investigate confinement effects in phase separated block copolymers”
20. A PINO (Polymer Initiative of Northeast Ohio) Conference; June 2013, Cleveland, OH. *Presenter* – A.M. Jordan; “Forced assembly coextrusion as an approach to investigate confinement effects in phase separated block copolymers”
21. 248th ACS Meeting, August 2014, San Francisco, CA. *Presenter* – L.E. Matolyak; “All-organic ion-sensitive composites with electrospun nanofibers”
22. 253th ACS Meeting, Excellence in Graduate Polymer Research, April 2017, San Francisco, CA. *Presenter* – M.E. Leslie; “Bioinspired stimuli-responsive materials: Concurrent shape and color change in programmed cholesteric liquid crystal elastomers”
23. 253th ACS Meeting, April 2017, San Francisco, CA. *Presenter* – S.L.M. Alexander; “Tunable hygromorphism: Structural implications of low molecular weight gels and electrospun nanofibers in bilayer composites”
24. 255th ACS Meeting, March 2018, New Orleans, LA. *Presenter* – K.M. Van de Voorde; “Tailoring the mechanics and degradation of polyester fibers through manipulating structure and morphology”
25. Gore Poster Session, December 18, 2018, Newark, DE. *Presenter* – C.B. Thompson; “Chemical Gradients and Tunable Mechanics in *Nereis* Jaw Inspired Supramolecular Interpenetrating Networks”
26. GRC Polymers, June 9-14, 2019, Holyoke, MA. *Presenter* – C.B. Thompson; “Impacts of Morphology and Network Architecture on Stimuli-Responsive Behavior and Mechanics in Polychaete Jaw Inspired Supramolecular Interpenetrating Networks”
27. AIChE Annual Meeting, Orlando, FL. *Presenter* – S.L.M. Alexander; “Structural Guides: Influence of High Molecular Weight Polymer Additives on Low Molecular Weight Gels Towards Solid-State, Composites”, November 12, 2019
28. ACS Spring 2020, Virtual. *Presenter* – D. Jang; “Tuning shape memory response in polymer-peptide hybrids”, April 13, 2021
29. ACS National Meeting, Spring 2022, San Diego, CA. *Presenter* – J.A. Thomas; “Non-chain Extended Peptide-polyurea Hybrids as a Platform for Injectable Gels”
30. ACS National Meeting, Spring 2022, San Diego, CA. *Presenter* – F. Klinecicz; “Additive Manufacturing as a Platform for Thermally-responsive Bilayers”

31. American Institute of Chemical Engineers Annual Meeting, March 22, 2022, San Diego, CA. *Presenter* – Y.T. Wong; “Exploring the Relationship Between Architecture and Mechanics in Lignin-Derivable Polymer Networks”

Workshops Taught/Organized

1. University of Minnesota/Prime Toughness Workshop, Minneapolis, MN, “Bio-inspired Strategies for Mechanical Enhancement”, January 14, 2010. *Organizer*: Frank S. Bates.
2. “Personal Experiences during the Interview Process: *The Do’s and Don’ts*”, Future Faculty Workshop: Diverse Leaders of Tomorrow, July 19-21, 2010, Amherst, MA. *Organizer*: Gregory Tew (UMass Amherst)
3. “Promoting Diversity in Academia: The Importance of Mentoring”, CWRU Power of Diversity Lecture Series, February 9, 2011. *Organizer*: Marilyn Mobley
4. “Personal Experiences during the Interview Process: *The Do’s and Don’ts*”, Future Faculty Workshop: Diverse Leaders of Tomorrow, June 19-21, 2011, Boston, MA. *Organizer*: Timothy Swager (MIT)
5. “Quick-start Professor”, Path for Professorship, October 29, 2011; MIT, Boston, MA. *Organizer*: Dean Blanche Staton (MIT)
6. “Personal Experiences during the Interview Process: *The Do’s and Don’ts*”, Future Faculty Workshop: Diverse Leaders of Tomorrow, July 15-17, 2012; UCSB, Santa Barbara, CA. *Organizer*: Craig Hawker (UCSB)
7. “Developing Research Interests (Creating an Identity)”, and “Getting Started - Running a Group”, Future Faculty Workshop: Diverse Leaders of Tomorrow, July 15-17, 2013; GA Tech, Atlanta, GA. *Organizer*: Rosario Gerhardt (GA Tech)
8. “Developing Research Interests (Creating an Identity)”, “Junior Faculty Panel Discussion “Unwritten Rules of the Path to Professorship Panel Discussion”, Future Faculty Workshop: Diverse Leaders of Tomorrow, 2014; MIT, Cambridge, MA. *Organizers*: Timothy Swager and Jeremiah Johnson (MIT)
9. “How to ask Research Questions”, Polymer Physics GRS, July 12-13, 2014.
10. “Preparing Proposals”, Future Faculty Workshop: Diverse Leaders of Tomorrow, 2016; University of Delaware, Newark, DE. *Organizer*: Thomas Epps (UD)
11. 3rd Annual Academic Research and Leadership Symposium, March 25-26, 2016, Boston, MA. Faculty Development Symposium, “High Impact Publishing”
12. “Promoting Diversity in Academia: The Importance of Mentoring and STEM”, University of Massachusetts, Amherst, Graduate Students for Diversity in Science and Engineering (GSDSE), April 22, 2016.
13. Faculty Diversity Workshop, CWRU, Cleveland, OH, “The Road to Tenure”, May 2, 2016.
14. Strategies for Success”, Future Faculty Workshop: Diverse Leaders of Tomorrow, 2016; University of Delaware, Newark, DE. *Organizers*: Emily Pentzer (CWRU), LaShanda Korley (CWRU), Thomas Epps (UD)
15. 2018 Academic Research and Leadership Network, Faculty Development Symposium; Research Network Symposium, March 23-24, 2018, NSBE, Pittsburgh, PA. *Organizers*: Chekesha Watson (Cornell), LaShanda Korley (UD), Valencia Koomson (Tufts)

Funding

Funded Proposals (Completed)

ACS PRF Starter G

ACS PRF-47999-G7

“Hierarchically-assembled Segmented Polyurethanes: Mechanical Reinforcement in a Multi-phase Elastomeric System”

Amount: \$55,000 Project Period: May 1, 2008 – August 31, 2010

NSF BRIGE

NSF EEC-0824333

"BRIGE: Toughening Mechanisms in Supramolecular Networks with Photocrosslinkable Moieties"

Amount: \$175,000 Project Period: August 15, 2008 – July 31, 2011

DOD-ARO; Natick Labs

W911QY-08-C-0142 (co-PI: Gary Wnek; co-PI: L.T.J. Korley)

"Toward Thin and Tactile, Chem/Bio Agent-Protective Gloves" (co-PI)

Amount: \$205,650 Project Period: October 1, 2008 – December 31, 2011

NSF REU

NSF DMR-0851620 (PI: David Schiraldi; co-PI: L.T.J. Korley)

REU: Research Experience for Undergraduates in Polymer Science & Engineering

Amount: \$270,000 Project Period: April 1, 2009 – March 31, 2012

DOD Defense University Research Instrumentation Program (DURIP)

W911NF-11-1-0343 (PI: Stuart Rowan; co-PI: L.T.J. Korley)

"Mini-Mechanical Testing Machine"

Amount: \$95,764 Project Period: August 18, 2011 – August 17, 2012

3M Nontenured Faculty Grant

"Advanced Materials: Combining self-assembly and confined-assembly"

Amount: \$45,000 Project Period: July 1, 2010 – June 30, 2013

CWRU Skin Diseases Research Center Pilot and Feasibility Program

NIH AR039750 (PI: Gary Wnek; co-PI: L.T.J. Korley)

"The Development of a Multilayered Drug Delivery System for Enhanced Administration of Silicon Phthalocyanine Photosensitizer (Pc4)"

Amount: \$30,900 Project Period: August 1, 2010 – July 31, 2011

NSLS Faculty/Student Research Support Program at BNL

"Confinement-induced Assembly of Block Copolymers in Multilayer Films: In-situ Deformation Behavior"

Amount: \$2,000 Project Period: September 1, 2010 – December 31, 2010

ACS PRF New Directions

"Biomimetic IPNs - harnessing the power of phase interactions"

Amount: \$100,000 Project Period: September 1, 2012 – August 31, 2015

Department of Education GAANN

"Polymer Research and Education for a Sustainable Economy: A Graduate Assistance in Areas of National Need (GAANN) Proposal" (PI: Alexander Jamieson; co-PI: L.T.J. Korley; L. Zhu)

Amount: \$659,625 Project Period: August 31, 2012 – August 30, 2015

NSF-STC: Center for Layered Polymeric Systems (CLIPS)

NSF DMR-0423914

“CLiPS: Confinement-induced assembly” (PI: Eric Baer; Investigator: L.T.J. Korley)
Amount: \$120,000/yr (to Korley) Project Period: July 1, 2007 – July 31, 2016

NSF CAREER Award

NSF DMR-0953236

“CAREER: Hierarchical Polymeric Hybrids – Lessons from Nature in Mechanical Behavior”
Amount: \$505,000 (including \$15,000 in REU Supplements) Project Period: August 1, 2010 – July 31, 2016

The Sherwin-Williams Company

“The Sherwin Williams - Case Western Reserve Partnership Fund”

Amount: \$125,000 Project Period: September 1, 2007 – August 30, 2014

NSF CMMI

“Nanofibers from Multilayered Forced Assembly Polymer Films” PI: Wnek, co-PI: Korley
Amount: \$299,963 Project Period: September 1, 2013 – August 31, 2017

DuPont Young Professor Grant

Amount: \$75,000 Project Period: September 1, 2011 – August 31, 2017

NSF REU (*change of PI*)

REU Site: Bioinspired Materials and Systems

Amount: \$ 358,444 Project Period: September 1, 2016 – August 31, 2019

Chemours

Optimization and Design of Next-Generation Low Surface Energy Fluoropolymer Coatings Technologies (PI: T. H. Epps, III; co-PIs: L.T.J. Korley; D. Burris)

Amount: \$170,694 Project Period: October 1, 2018 – September 30, 2019

NSF DMR Polymers

Harnessing the power of polymer phase interactions in the design of supramolecular interpenetrating networks

Amount: \$ 435,728 Project Period: July 1, 2016 – June 30, 2020

ACS PRF

Probing the Influence of the Assembly of Polymer Additives in the Reinforcement of Responsive Gels

Amount: \$110,000 Project Period: September 1, 2017 – August 31, 2020

Gore

Assessment of fiber-reinforced hydrogel systems: fundamental factors for effective enhancement (PI: Korley)

Amount: \$277, 360 Project Period: January 1, 2020 – March 31, 2022

Funded Proposals (Current)

PIRE: Bio-inspired Materials and Systems

Amount: ~\$5,500,000 Project Period: September 1, 2017 – August 31, 2022

NSF

Growing Convergence Research (GCR): Life Cycle Management of Materials: Sustainable Biomass to Designer Polymer Systems (PI: T.H.Epps, III; Senior Personnel: L.T.J. Korley)
Amount: \$3,599,999 Project Period: December 1, 2019 – November 30, 2024

NSF

CAS: Lignocellulosic building blocks towards high-performance and sustainable polysulfones and polyurethanes (PI: L.T.J. Korley)
Amount: \$511, 883 Project Period: June 1, 2020 – May 31, 2023

NSF

University of Delaware MRSEC - Center for Hybrid, Active, and Responsive Materials (CHARM) (PI: T. Epps, III; co-PI: L.T.J. Korley)
Amount: \$18,000,000 Project Period: September 1, 2020 – August 31, 2026

DOE

EFRC: Center for Plastics Innovation (PI: L.T.J. Korley)
Amount: \$11,650,000 Project Period: August 1, 2020 – July 31, 2024

State of Delaware

DE STATE CPI_KORLEY

Amount: \$275,000 Project Period: January 1, 2022 – July 31, 2024

Accepted Beamline Proposals

"Confinement-induced Assembly of Block Copolymers in Multilayer Films: In-situ Deformation Behavior", BNL X27C, September - December 2010

"Confinement-induced Assembly of Block Copolymers in Multilayer Films: In-situ Deformation Behavior", BNL X27C, September - December 2011

"Confinement-induced Assembly of Block Copolymers in Multilayer Films: In-situ Deformation Behavior", BNL X27C, May - August 2012

"In-situ tensile deformation of nanofiber composites produced via forced-assembly coextrusion", BNL X27C, September - December 2013

"Investigation of the Structural Evolution of Self-assembling Nanoscale Fillers using In-situ SAXS/WAXS", Argonne National Lab, APS 12-ID-B, Run Cycle 2015-3

"Investigation of the Structural Evolution of Self-assembling Nanoscale Fillers using In-situ SAXS/WAXS", Argonne National Lab, APS 12-ID-B, Run Cycle 2016-1

Researchers Supervised

Ph.D. Students Completed

1. Tiffani M. Burt (nee Abernathy) – *Structure-property Relationships of Block Copolymers Confined via Forced-Assembly Co-extrusion for Enhanced Physical Properties*, 10/6/12 (Process Engineer at Sealed Air)
2. J. Casey Johnson – *Hierarchically-assembled Elastomers Inspired by Nature*, 6/16/14 (Research Investigator, DuPont – Circleville Research Lab)

3. Nandula D. Wanasekara – *Responsive Mechanics in Composite Materials* - 08/2014 (Head of the Department of Textile and Apparel Engineering, University of Moratuwa, Sri Lanka)
4. Keon-Soo Jang – *Exploring Mechanics via Structural Interplay in Supramolecular Networks, Melt-Extruded Fibers, and Liquid Crystal/Polymer Blends* - 10/7/15 (University of Suwon)
5. Seyedali Monemian* - *Tuning Mechanics of Bio-Inspired Polymeric Materials through Supramolecular Chemistry* – 5/2016
6. Alex M. Jordan – *Fiber-Composite In Situ Fabrication: Multilayer Coextrusion As An Enabling Technology* – 06/28/16 (Assistant Professor, Department of Engineering and Technology, University of Wisconsin-Stout)
7. Lindsay E. Matolyak – *Design of Hierarchy in Polymers via Synthesis and Fabrication Methods* - 09/7/17 (Research Chemist, PPG)
8. Symone L.M. Alexander – *Exploring Interfaces of Nanofiber Networks Functioning As Hierarchical Additives In Polymer Nanocomposites* - 06/14/18 (Assistant Professor, Auburn University)
9. Michelle Leslie Brannum – *Functional Performance of Liquid Crystal Elastomers* – 01/18/19 (Chief, AFRL Commander's Action Group (CAG))
10. Chase Thompson (MSEG) – *Utilizing Self-Assembly and Covalent Crosslinking to Control Mechanics and Stimuli-Response in Supramolecular Polymer Networks* 07/22/2020 (Post-doc, NIST)
11. Kristian Van de Voorde (MSEG) - *Exploring Morphological Effects on Bulk Material Properties of Co-Extruded Nanofiber Blends* 11/15/2021 (Post-doc, DOD)

M.S. Students Completed

1. Nicholas R. Wheeler – *Tunable Supramolecular Elastomers*, 9/9/11 (Ph.D. CWRU, 2017)
2. Bingrui Li – *Peptide PU Hybrid Networks*, 3/26/16 (Oak Ridge National Laboratory)
3. Ada Anyanwu (MSEG) – *Hygromorphic Composites*, 4/30/19
4. Akash Vaidya (CBE) – *Biologically-inspired Networks and Elastomers*

Ph.D. Students Current

University of Delaware

1. Daseul Jang (MSEG) – *Bio-inspired Polymer Peptide Hybrid Nanocomposites* 07/2022 (expected)
2. Jignesh Mahajan (MSEG, Co-advised T. H. Epps, III) – *Biomass Components in Isocyanate-Free Polyurethanes* 07/2023 (expected)
3. Francis Klinecicz (MSEG, UNIDEL Fellow) – *Multifunctional Fibers* 07/2023 (expected)
4. Jessica Thomas (MSEG) – *Supramolecular Polymeric Systems* 07/2024 (expected)
5. Yu-Tai Wong (CBE) – *IPNs and Networks derived from Biomass* 07/2024 (expected)
6. Maida Mahmood (MSEG, Co-advised T. H. Epps, III) – *Lignin-derived Catalysts and Polymeric Systems* 07/2024 (expected)
7. Sampanna Mhatre (MSEG, Co-advised T.H. Epps, III) – *Bio-based Non-isocyanate Polyurethanes* 12/2025 (expected)
8. Catherine Lewis (MSEG) – *Reinforced Hydrogels* 07/2027 (expected)
9. Haesoo Lee (CBE, Co-advised T.H. Epps, III) – *Depolymerization Strategies for Polyureas* 12/2023(expected)

M.S. Students Current

University of Delaware

1. Yang Yu (MSEG) – *Probing reaction products of plastics deconstruction* 08/2022 (expected)

Visiting Researchers

1. Kevin van der Ploeg – Wageningen University, The Netherlands 2/2018-07/2018, *Supramolecular Semi-IPN Nanocomposites*

Postdoctoral Researchers

1. Linden Bolisay – Peptide-based Polyurethane Elastomers (2007-2008) *now at L'Garde, Inc., Senior Materials Engineer
2. Jong Keum – Scattering Phenomena in Confined BCP-Iron Oxide Nanocomposites and Confined BCP Multilayered Films (2009) *now at Oak Ridge National Laboratory, X-ray Scientist
3. David A. Stone – Thin, Breathable, and Protective Elastomeric Composites (2009 – 2010) *now at PPG, Research Chemist
4. Vidya Viswanath – Functional Fiber Scaffolds (2015-2016)* now at UNIFI Mfg., Inc., Materials Technology Scientist
5. Sourav Chatterjee – Peptide-hybrids toward functional gels and actuators (2018-2019)
6. Yanchun Tang – Polymer-reinforced gels (2018-2020)
7. Laura Beckett – Fiber-reinforced hydrogels and reconfigurable networks (2019-)
8. Zachary Hinton (co-advised with T.H. Epps, III) – Probing additive influence on plastics depolymerization (2020-)
9. Garrett Bass (co-advised with T.H. Epps, III) – Lignin-derived thermoplastics (2020-)
10. Tianwei Yan (co-advised with T.H. Epps, III) – Valorization of plastics waste via chemical transformation (2021-)
11. Mridula Nandi (co-advised with Thomas H. Epps, III) – Polyurethane depolymerization and sustainable polyurethane development (2021-)
12. Alex Balzer (co-advised with Thomas H. Epps, III) - Foamed structures to enable deconstruction technology (2022-)

Undergraduate Students (current students in bold) (*non-UD/CWRU researchers in italics*)

1. Dr. Ajay Sapre – “Peptide Synthesis & Bioactive Elements for Skin Cancer Therapeutics” (2007 – 2010) * Ph.D. UC San Diego (Prof. Sadik Esener)
2. David H. Jones – “Thermally-stable Liquid Crystal Assembly in Multilayered Films” (2007-2011) * MS, Fall 2011 at Penn State (Prof. Mike Hickner)
3. Matthew Shaughnessy – “Peptide Assembly” (Fall 2007)
4. Curtis Holmes – “Confined BCP Assembly” (Fall 2007)
5. Emily Hoffman – “Well-defined Networks” (Spring 2008)
6. Jessica Patz – “Study of the Mechanical and Rheological Behavior of Polyurethane Nanocomposites” (REU, Penn State Erie, Summer 2008) MS, CWRU (Prof. João Maia)
7. Sean Carr – “Polyurethane Elastomers” (Fall 2008)
8. Nirosha Wimalasena – “Deposition Methods for Tailoring Film Surfaces for Enzymatic Functionalization” (Spring 2009)
9. *Christopher Hendrix* – “Control of Peptide Secondary Structures in PBLG by Mixing with POSS functionalized with PBLG” (REU, Cornell University, Summer 2009 – funded ACS PRF Starter G)
10. *David Clark* – “Thermomechanical Analysis of Styrenic Block Copolymers” (REU, Delta State University, Summer 2009)
11. *Kristen Uitenham* – “Electrospinning Catalytic Mat for the Degradation for Chemical Warfare Agents” (REU, North Carolina Agricultural and Technical State University, Summer 2009)

12. Sarah Jacobs – “Supramolecular Elastomers – Synthetic Development” (2009-2011)
13. Kenneth Keisel – “Multilayered Elastomeric BCPs” (Fall 2009)
14. Alex M. Jordan – “Confinement-induced Assembly of BCPs and Dielectric Polymers in Multilayered Architectures” (2010 – 2011) *now Graduate Student at CWRU (Prof. L.T.J. Korley)
15. Kristina Vaci – “Supramolecular Oligomeric Toughening” (Spring 2010)
16. *Jesse Gadley* - “Bimodal Supramolecular Elastomers” (REU, Penn State Erie, Summer 2010) *now Graduate Student at CWRU (Prof. João Maia)”
17. *Mayo Adigun* – “Synthesis of PDMS-PBLG-PDMS” (REU, Fisk University, Summer 2010)
18. *Kyle Comeau* – “Self-assembling Nanofibers as Polymer Additives” (REU, Youngstown State University, Summer 2010)
19. Ryan Boyan – “Electrospun Polymer Composites” (Spring 2010)
20. Carmen Kakish - “Thin Film Behavior of Styrenic BCPs” (Fall 2011)
21. Elena Stachew – “Tailored Drug Delivery from Electrospun Composites” (2011 – 2012) * Ph.D. Candidate, Biomimickry Fellow, University of Akron
22. Benjamin Yavitt - “Tailored Drug Delivery from Electrospun Composites” (2011 – 2012) *Ph.D., UMass Amherst
23. Gerardo Ortega – “Small Molecule Gelators as Composite Fillers” (2011 – 2012) & “Supramolecular Toughening” (2013)
24. Jonathan Breon – “Polystyrene Reinforced with Highly Aligned Crosslinked Electrospun SBS Fibers” (REU, Penn State, Summer 2011)
25. *Isaiah Simpson* – “Volume Swelling Mediated Morphological Control” (REU, GA Tech, Summer 2011-funded by NSF CAREER supplement)
26. Jake Farkas – “Analysis of Mechanical Properties of SEPS-PS and Synthesis of Polyurethane” (Fall 2011)
27. William (Bill) Lenart – “Connection between Crystal Orientation and Mechanics in PVDF-TFE Multilayered Films) *now Graduate Student, Fall 2013 at CWRU (Prof. Michael J.A. Hore)
28. Symone Cook (Alexander) – “The Development of Photoresponsive Filler for Use in EO-EPI Composites & Synthetic Variations toward Responsive Peptide Copolymers” (REU, Howard University, Summer 2012- funded by NSF CAREER supplement) *Ph.D. CWRU, 2018
29. Nicholas Schindler – “Liquid Crystal Synthesis and Assembly” (Fall 2012)
30. Emily Vrbensky – “Magnetic Nanorods and Nanotubes” (Spring 2013 – Spring 2014)
31. Tyler Marotta- “Effect of Strain Rate and Temperature on Elastic Modulus in PMMA/SEPS Multilayered Films” (2012 – 2013) *Ph.D. Candidate, University of Cincinnati
32. *Rose Galley* – “Strain Rate Effects in Confined BCP Multilayer Films” (REU, Purdue University, Summer 2013)
33. Shadi Ahmadmehrabi – “Gel Assembly and Fiber Formation” (Spring 2014) *Medical School, Cleveland Clinic
34. Evan Ostrowski – “Peptide hybrids” (Spring 2014) *Ph.D. Candidate, Princeton University
35. Jonathon Perry – “Soft Segment Synthesis for Bio-inspired Polyurethane/urea” (REU, Kentucky State University, Summer 2014)
36. Samuel Shiau – “Polymer dispersed Liquid Crystals” (Fall 2014)
37. Jenna Mancusco – “Quantification of Cross-link Density in Poly(acrylic acid)” (Spring 2015)
38. Thomas Cotey – “Polymer Composites” (Spring 2015 – Spring 2016)
39. Kristin Jones – “Electrospinning of peptide polymer hybrids” (REU Summer 2015 – NSF CAREER supplement, Fall 2015, Spring 2016) B.S. Chemical Engineering, *M.S. Candidate, Rutgers University
40. Helen Zhao – “Enhancing Gelator Mobility via Solvent Annealing” (Fall 2015)

41. Justin Lee – “Dye Elution Study of SSY in a Multi-component Composite System” (Fall 2015)
42. Jeremy Chai – “Nafion Actuation – Implications for PAA” (Spring 2015 – Fall 2015)
43. James Covello – “Supramolecular Networks” (Fall 2016 – Fall 2017)
44. Bailey Flint – “Biocompatible PEG Hydrogels Synthesized under Mild Conditions for Tissue Scaffold Engineering” (Spring 2017)
45. *Brendan Cheng* – “Mechanical and Moisture-Absorbing Properties of Electrospun Polyurethane Elastomer-Hydrogel Blends for Prosthetic Applications” (REU, Duke University, co-advised with Gary Wnek, Summer 2017)
46. Jonathan Petrozzini – “Blended Extruded Fibers” (Fall 2017; transferred to Cornell University)

University of Delaware

1. Mya Soukaseum – “Polymer-reinforced Gels” (CBE, UD, Volunteer, Summer 2019 - Summer 2021; *Currently Ph.D. Student at Drexel University*)
2. *Sofia Rose Alfieri* – “3D-printing of Hydrogels” (Biological Engineering, Purdue University, Volunteer, Summer 2019)
3. **Erica Hild** – “3D-printing of Hydrogels” (BME, UD, Volunteer, Winter 2020 – Spring 2020, Winter 2021-Spring 2022)
4. Juan Marcelo Hinojosa Davalos – “Supramolecular Nanocomposites” (CBE, UD, Volunteer, Winter 2020 – Spring 2020)
5. **Will Quintana** – “Bilayer modeling” (MSEG, UD, NSF PIRE REU, Summer 2020)
6. **Eduardo Nombera-Bueno** – “Sustainable Material Additive Manufacturing (CBE/MSEG, Summer Scholars, Summer 2020)
7. Victoria Walters - “Lead Capture Membranes” (MSEG, UD, Volunteer, Fall 2020)
8. Will Quintana – “Prediction of Actuation of 3D Printed Bilayers” (MSEG, Summer Scholars, Summer 2020)
9. Will Quintana – “UV Post Cure and Crosslink Density of 3D Printed Hydrogel Bilayers” (MSEG, Summer Scholars, Summer 2021)
10. Erica Hild– “Additive Manufacturing of Peptide Nanocomposites” (BME, Winter 2022)
11. Anvita Gonthina – “Sustainable Functional Materials” (CBE, Summer Scholars, Summer 2022)
12. Erica Hicks – “Incorporation Of Rigid Peptide Rod Assemblies Into Hydrogel Networks” (Chemistry, Delaware State University, MRSEC REU Summer 2022)

Undergraduate Senior Research Projects Supervised

UD

1. Mya Soukaseum – “Mechanics of Fiber-reinforced Hydrogels” (Fall 2020, Spring 2021)

CWRU

1. David Jones - “Thermally-stable Liquid Crystal Assembly in Multilayered Films” (May 2011), (B.S. Engineering Physics)
2. Steven Vesole – “Antibiotic loaded Cyclodextrin Hydrogels” (Fall 2009, Advisor: H. von Recum)
3. Benjamin Yavitt - “Electrospinning Polypeptides: The Search for Secondary Structure Effect on Mechanical Properties” (Fall 2011 – Spring 2012)
4. Gerardo Ortega – “Tunable Fiber Diameter Through Variation in Co-Solvent Solution” (Spring 2014)
5. Emily Vrbensky – “UV-initiated Crosslinking of PEO and PETA for a Tunable Fibrous Scaffold” (Fall 2015)
6. Thomas Cotey – “Analysis of Low Molecular Weight Gel Composites” (Fall 2015)

7. Shadi Ahmadmehrabi – “Electrospinning Aligned Nanofiber Mats using Parallel Electrodes” (Spring 2016)
8. Laura Childers – “Electrospinning: Polymer-Peptide Hybrids and Drug Elution Constructs” (Spring 2017)
9. Alex Leong – “Gelator Incorporation in IPNs” (Fall 2017)

High School Students Supervised (current students in bold)

1. Edmund Lewis, East High School, Cleveland, OH (2007-2009)
2. Davon Johnson, East Technical High School, Cleveland, OH (2009-2010)
3. Gerardo Ortega, Cloverleaf High School, Lodi, OH (Summer 2009), B.S. Chemical Engineering, CWRU 2014
4. Tanautica Bush, Shaw High School, East Cleveland, OH (2011 – 2013)
5. Terrisa Nguyen, New West Technical High School, Cleveland, OH (2014-2016)
6. Sri Vidya Uppalapati, Beachwood High School, Beachwood, OH (2014-2016)
7. Catherine McCarthy, Laurel School, Shaker Heights, OH (2017)

Student Awards

1. Tiffani M. Burt, *Selected Participant* 2011 - 13th National School of Neutron and X-ray; Oak Ridge National Laboratory and Argonne National Laboratory
2. Tiffani M. Burt, Verhosek Travel Fund Award, Spring 2011
3. J. Casey Johnson, Verhosek Travel Fund Award, Spring 2011
4. Alex M. Jordan, *Selected Participant* 2013 - 15th National School of Neutron and X-ray; Oak Ridge National Laboratory and Argonne National Laboratory
5. Lindsay E. Matolyak, NSF Graduate Research Fellowship *Honorable Mention* 2013, 2014
6. Lindsay E. Matolyak, PPG Award, PINO, 2015
7. Symone L.M. Alexander, NSF Graduate Research Fellow, 2015
8. Michelle E. Leslie, DOD Science, Mathematics and Research for Transformation (SMART) Scholar, 2015
9. Kristen van der Voorde, NSF Graduate Research Fellow, 2017
10. Symone L.M. Alexander, Covestro Graduate Student Award Competition Winner, 2017
11. Symone L.M. Alexander, PMSE Graduate Student Travel Award, 2018
12. Francis Klinecicz, UNIDEL Award (5 yr), 2018
13. Chase B. Thompson, MSEG Outstanding Graduate Student Service Award, 2019
14. Chase B. Thompson, 2019 CHRNS Summer School on the Fundamentals of Neutron Scattering – Spectroscopy
15. Kris Van de Voorde - *Selected Participant* 2020 - National School of Neutron and X-ray; Oak Ridge National Laboratory and Argonne National Laboratory
16. Joanne Norris – DENIN Fellowship Award

Thesis, Qualifying Exam, and Thesis Proposal Committees

I have served or am currently serving on the following graduate student committees. The primary advisor and department are noted in parentheses.

University of Delaware

First Year Qualifying Exam

UD Chemical and Biomolecular Engineering

1. Robert O'Dea, 1st Yr Qualifier (Thomas H. Epps, III) 2018
2. Arjita Kulshreshtha, 1st Yr Qualifier (Arthi Jayaraman) 2018
3. Bader Jarai, 1st Yr Qualifier (Catherine Fromen) 2018
4. Mukund Kabra, 1st Yr Qualifier (Chris Kloxin) 2018

5. Kartik Bomb, 1st Yr Qualifier (Cathy Fromen, April Kloxin) 2019
6. Zijie Wu, 1st Yr Qualifier (Arthi Jayaraman) 2019
7. Haesoo Lee, 1st Yr Qualifier (Norman Wagner) 2019
8. Jordan Willie, 1st Yr Qualifier (Thomas H. Epps, III) 2019
9. Kim Jihyuk, 1st Yr Qualifier (Norman Wagner; Antonio Faraone; Arthi Jayaraman) 2021
10. Shizhao Lu, 1st Yr Qualifier (Arthi Jayaraman) 2021
11. Oluwadare Badejo, 1st Yr Qualifier (Marianthi Ierapetritou) 2021
12. Mruthula Rammohan, 1st Yr Qualifier (Thomas H. Epps, III; Millie Sullivan) 2021
13. Jessie Sun, 1st Yr Qualifier (Dion Vlachos) 2022
14. Jamael Ajah, 1st Yr Qualifier (Thomas H. Epps, III) 2022
15. Chas Fields, 1st Yr Qualifier (Dion Vlachos; Raul Lobo) 2022
16. Christine Oberhausen, 1st Yr Qualifier (Dion Vlachos) 2022
17. Minh Tran, 1st Yr Qualifier (Alexandra Bayles) 2022

Thesis Committees

UD Chemical and Biomolecular Engineering

1. Priyanka Ketkar (Thomas H. Epps, III) 2018
2. Josh Meisenhelter (Chris Kloxin) 2020
3. Mukund Kabra (Chris Kloxin) 2020
4. Zijie Wu (Arthi Jayaraman) 2020
5. Robert O'Dea (Thomas H. Epps, III) 2020
6. Arjita Kulshreshtha (Arthi Jayaram) 2022

UD Materials Science and Engineering

1. Colleen Murray (Erik Thostenson) M.S. Thesis 2020
2. Gregory Peterson (Thomas H. Epps, III) Ph.D. 2021

Senior Thesis Committee

1. Christopher Johnson (Self-Assembly of Tapered Brush-Coil Polymers on Surfaces in Dilute Solution; Arthi Jayaraman) 2019-2020, Second Reader

Qualifying Exam

UD Materials Science and Engineering

1. Gregory Peterson (Thomas H. Epps, III)
2. Keith Coasey (Michael Mackay)
3. Sai Patkar (Kristi Kiick)
4. Yao Tang (Darrin Pochan)
5. Zachary Swain (Michael Mackay)
6. Derek J. Bischoff (Michael Mackay)
7. Amanda McCahill (Darrin Pochan)

UD Biomedical Engineering

1. N'Dea Irvin-Choy (Emily Day, Jason Gleghorn)

UD Chemistry

1. Elorm Awuyah (Laure Kayser)

CWRU

1. Vishwas Pethe, M.S. 2007 (Anne Hiltner and Eric Baer, Macromolecular Science and Engineering)

2. Charles Sing, M.S. 2008 (Christoph Weder, Macromolecular Science and Engineering)
3. Jill Kunzelman, Ph.D. 2009 (Christoph Weder, Macromolecular Science and Engineering)
4. Joseph Lott, Ph.D. 2010 (Christoph Weder, Macromolecular Science and Engineering)
5. Marlena Washington, Ph.D. 2010 (John Protasiewicz, Chemistry)
6. Mohit Gupta, Ph.D. 2010 (David Schiraldi, Macromolecular Science and Engineering)
7. Yeheng Wu, Ph.D. 2010 (Kenneth Singer, Physics)
8. Mark Burnworth, Ph.D. 2011 (Stuart Rowan, Macromolecular Science and Engineering)
9. Blayne McKenzie, Ph.D. 2011 (Stuart Rowan, Macromolecular Science and Engineering)
10. Jack Johnson III, Ph.D. 2011 (David Schiraldi, Macromolecular Science and Engineering)
11. Lauren Buerkle, Ph.D. 2011 (Stuart Rowan, Macromolecular Science and Engineering)
12. Deepak Langhe, Ph.D. 2011 (Eric Baer, Macromolecular Science and Engineering)
13. Yuxin Wang, Ph.D. 2012 (David Schiraldi, Macromolecular Science and Engineering)
14. Chuan-Yar (Yaya) Lai, Ph.D. 2012 (Eric Baer, Macromolecular Science and Engineering)
15. Joel Carr, Ph.D. 2013 (Eric Baer, Macromolecular Science and Engineering)
16. Shannon Armstrong, Ph.D. 2013 (Eric Baer, Macromolecular Science and Engineering)
17. Amanda Way, Ph.D. 2013 (Stuart Rowan, Macromolecular Science and Engineering)
18. Shannon Moore, Ph.D. 2013 (Melissa Knothe Tate, Biomedical Engineering)
19. Guojun Zhang, Ph.D. 2014 (Eric Baer, Macromolecular Science and Engineering)
20. Matt Herbert, Ph.D. 2015 (David Schiraldi, Macromolecular Science and Engineering)
21. Saide Tang, Ph.D. 2015 (Lei Zhu, Macromolecular Science and Engineering)
22. Alicia Smith-Train, PhD Candidate (Department of Sociology)
23. Si-Eun Kim, Ph.D. Candidate (Jon Pokorski, Macromolecular Science and Engineering)
24. Elvis Cudjoe, Ph.D. Candidate (Stuart Rowan, Macromolecular Science and Engineering)
25. Parker Lee, Ph.D. Candidate (Jon Pokorski, Macromolecular Science and Engineering)
26. Anuja Shirole, Ph.D. Candidate (Christoph Weder, Adolphe Merkle Institute, University of Fribourg, Switzerland)
27. William (Bill) Lenart (Michael J.A. Hore) Ph.D. March 2020
28. Susan Kozawa (Gary E. Wnek) Ph.D. April 2020

Teaching Experience and Qualifications

UD

1. MSEG 667 Bio-inspired Materials: From Synthesis to Manufacturing (Fall, 2018)
2. MSEG 608 Introduction to Structure and Properties of Materials (Fall, 2019-2021)

CWRU

Undergraduate (Required course for Polymers Track)

1. EMAC 355 Polymer Analysis Laboratory (Spring, 2008 - 2017)

Undergraduate

1. USSO 290 E – The Evolution of Running (Spring 2015)
2. FSNA 156 – The Chemistry, Physics, and Engineering of Chocolate (Fall, 2015 - 2016)

Graduate (Electives)

1. EMAC 413 Polymers Plus Green Chemistry and Engineering (Fall 2009, Spring 2011, Fall 2012, Fall 2014, Fall 2016, Fall 2017)
2. EMAC 422 Polymers Plus Microscopy (Fall 2008, Fall 2011, Fall 2013, Fall 2015)
3. EMAC 427 Polymers Plus a Sustainable Economy (Fall 2013) Co-taught

Professional Service

Membership in Professional Societies

1. American Chemical Society (2005 – present), Polymeric Materials Science and Engineering (PMSE) Division
2. American Physical Society (2010 – present), Division of Polymer Physics (DPOLY)
3. American Institute of Chemical Engineers (2005 – present), Materials Science and Engineering Division (MSED), Minority Faculty Forum, Minority Affairs Committee
4. The Philippine Polymer Society (PPS), Inaugural Honorary Member
5. Materials Research Society
6. American Institute for Medical and Biological Engineering (AIMBE), 2022-2023 Nominating Committee

Leadership Positions in Professional Societies

1. Member-at-Large American Chemical Society, PMSE Division, 2007-2009, 2012-2014; 2013-2015, 2016-2018, 2018-2020, 2020-2022 (*Elected Nationally*)
2. Founding Board Member, The Philippine Polymer Society (PPS)
3. Member, US National Committee for IUPAC

Conference/Program Committees

1. Organizing Committee, 2019 China-America FOE
2. Planning Group Member, 15th Annual US/Japan Kavli Frontiers of Science Symposium
3. Planning Group Member, 14th Annual US/Japan Kavli Frontiers of Science Symposium
4. Symposium Co-organizer, “Functional Materials”, ACS Regional Meeting, May 2009
5. Co-Chair, 20th Anniversary WIC Symposium - Celebrating Women in Chemical Engineering, AIChE Annual Meeting 2018
6. APS DPOLY, Session Organizer, “Polymer Networks, Gels, and Elastomers, March 2020
7. APS DPOLY, Short Course, Co-Organizer, “Sustainable Polymers: Physics of New Materials, Design for Sustainability, and End-of-Life, March 2022
8. ACS PMSE, Symposium Co-Organizer, Synthesis, Properties, and Application of Sustainable Polymers, Fall 2022

Chaired or Co-chaired Conference Sessions

1. *Discussion Leader*, Polymers Gordon Research Conference, 2009
2. Nanoscale Structure in Polymers II, AIChE 2009 Annual Meeting
3. Nanoscale Structure in Polymers III, AIChE 2009 Annual Meeting
4. Structure and Properties in Polymers I, AIChE 2010 Annual Meeting
5. Macromolecular, Supramolecular and Nanotechnology - General Oral Session III, 43rd IUPAC World Chemistry Congress, San Juan, PR. August 2011
6. Morphology and Transport in Charged Polymers, Block Copolymers, Membranes, and Films, APS, March 2011
7. Nanoscale Structure in Polymers I, AIChE 2011 Annual Meeting
8. Nanoscale Structure in Polymers I, AIChE 2012 Annual Meeting
9. Discussion Leader, Bioinspired Gordon Research Conference, 2014
10. MRS, SM8, Advanced Polymers, 2017
11. ACS PMSE Spring 2018: A) Advances in Macromolecular Science and Engineering: Symposium in Honor of David Schiraldi; B) ACS Award in Applied Polymer Science in Honor of Paula T. Hammond
12. *Discussion Leader*, Polymer Physics Gordon Research Conference, 2018

Editorial Position(s)/Advisory Boards/External Reviewer

Journal of Applied Physics, June 2018 – present (Associate Editor)
 NanoLetters, January 2020 – present

JACS Au, January 2021 - present
ACS Applied Materials & Interfaces, January 2020-December 2021
Macromolecules/ACS Macro Letters, January 1, 2012 to December 31, 2014
Journal of Materials Chemistry B, January 1, 2014 – August 31, 2017
Bioconjugate Chemistry, January 1, 2014 – August 31, 2018
Scientific Reports, February 2015 – present
WHYY Health + Science Advisory Group, March 2019 – June 2020
External Reviewer, NC State University's Department of Textile Engineering, Chemistry, and Science, November 2019

Reviewer for Journals and Organizations

Journals

ACS Applied Materials & Interfaces, ACS Macro Letters, ACS Nano, ACS Omega, ACS Sustainable Chemistry and Engineering, Acta Biomaterialia, Advanced Materials, Biomacromolecules, Chemical Communications, Chemistry of Materials, Composites Science and Technology, Encyclopedia of Polymer Science and Technology, Journal of Applied Polymer Science, Journal of Biomedical Research: Part A, Journal of Materials Chemistry, Journal of Polymer Science Part A Polymer Chemistry, Langmuir, Macromolecular Chemistry and Physics, Macromolecules, Nature Chemistry, Polymer, RSC Advances, Science, Soft Matter

Funding Agencies

National Science Foundation (NSF) Division of Materials Research (DMR); Chemical, Bioengineering, Environmental, and Transport Systems (CBET); Macromolecular, Supramolecular and Nanochemistry (MSN) Program, Research Infrastructure Improvement Initiative, Civil, Mechanical and Manufacturing Innovation (CMMI)

Department of Energy (DOE) Basic Energy Sciences (BES)

American Chemical Society (ACS) Petroleum Research Fund (PRF)

Defense Threat Reduction Agency (DTRA) Chemical and Biological Technologies Department

Technology Foundation STW, The Netherlands

U.S.-Israel Binational Science Foundation

National Organizations

Reviewer, National Academies of Sciences, Engineering, and Medicine's draft report, "Frontiers of Materials Research: A Decadal Survey"

University, College, and Department Service at UD

University

1. Chemical Safety and Infrastructure Working Group
2. Strategic Planning, Expanding Interdisciplinary and Global Opportunities Committee

College

1. College of Engineering, Strategic Formulation Initiative and Strategic Plan Steering Committee (Industrial Engagement)
2. *Sister 2 Sister* Mentoring event for STEM women graduate students and post-docs
3. College of Engineering, Guiding Coalition Committee
4. College of Engineering, Search Committee for the Director of the Center for Composite Materials (CCM)

Department

1. CBE Selection Committee - Nominations for University Outstanding Thesis Prize
2. MSEG Faculty Search Committee, Chair 2018-2019
3. MSEG Graduate Committee

University, College, and Department Service at CWRU

University

1. President's Committee on Child Care Options, Vice Chair (September 2012 – 2015)
2. Women in Science and Engineering Roundtable (WISER), Committee Member, Appointed (August 2012 – 2017)
3. President's Advisory Council on Women (PACOW), Committee Member, Appointed. (August 2011 – May 2017)
4. Phi Sigma Rho Engineering Sorority, Faculty Mentor, (August 2009 – 2017)
5. Dean's Evaluation Committee (2017)
6. Swagelok Center for Surface Analysis of Materials Decision Group (2016-2017)

College

1. Strategic Performance Committee, Committee Member, Appointed (February 2012 – August 2012)
2. CSE Undergraduate Committee, Fall 2013 - 2017
3. Platform Leader, Science and Technology Innovations, NSF CLiPS (2011 – 2016)
4. Faculty Panel on How to Write a Successful NSF CAREER Proposal (2013)
5. Committee for Strategic Planning in Materials (2016-2017)
6. Launch Committee, Julie Renner and Ya-Ting Lao Fall 2016 – Fall 2017

Department

1. Faculty Search Committee, Chair Fall 2016
2. Thermal and X-ray Laboratory Facilities, Faculty Director (2009 – 2017)
3. REU, Co-Director (2009 – 2015)
4. REU, Director (2015 – 2017)
5. Undergraduate Macro Student Organization (ugMSO), Student Org Advisor (2012 – 2016)
6. Undergraduate Committee, Committee Member (2008 – Present), Chair (Fall 2013 – 2017)

Other External Service

1. **National Renewable Energy Laboratory**, BioEnergy Technical Review Panel (2022 – present)
2. **Center for Sustainable Polymers, University of Minnesota**, External Advisory Board Member (2022-present)
3. **NSF and University of Chicago Sustainable Materials and Manufacturing Square Table**, Subject Matter Expert, April 28 – 29, 2021
4. **BioPACIFIC NSF Materials Innovation Platform**, External Advisory Member (2020 – present)
5. **National Centre of Competence in Research (NCCR) Bio-Inspired Materials (Fribourg, Switzerland)**, External Advisory Board Member (2014 – present)
6. **Future Faculty Workshop**, Invited Mentor, 2009 – 2018 (Carnegie Mellon, UMass Amherst, MIT, UCSB, GA Tech, UD, CWRU)

7. **Future Faculty Workshop**, Co-organizer, 2017, 2018, 2019 – Case Western Reserve University, Cleveland, OH; University of Delaware, Newark, DE; Princeton University, Princeton, NJ
8. **American Chemical Society**, Mentor in ACS Minority Scholars Program
9. **NSF CLiPS**, Polymer Envoy Advisor
6. **Citizens' Academy**, Introduced K – 1 underrepresented students at an urban charter school in the Cleveland area to polymer concepts. Introduced chemical engineering and plastics engineering to 4th grade students. Spring 2009, Fall 2010
7. **Many Faces of STEM**, Exposed Cleveland middle school students to role models (minority professors and administrators in CSE & CAS) in STEM disciplines and demonstrated key concepts in STEM. October 2008, November 2009
8. **Sister 2 Sister**, Engaged underrepresented, female undergraduates & graduate students in a roundtable discussion of concerns and strategies related to pursuing advanced degrees in STEM disciplines. 2008 - present
9. **McNair's Scholar 'Master Class' Speaker**, Discussed career paths and the importance of mentoring. July 2018