

**THOMAS H. EPPS, III**

University of Delaware (UD)

Thomas &amp; Kipp Gutshall Professor of Chemical &amp; Biomolecular Engineering,

Professor of Materials Science &amp; Engineering

Professor of Biomedical Engineering (Affiliated)

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**Education:**

NIST	Polymer Physics	NRC Postdoctoral Fellow	2006
University of Minnesota	Chemical Engineering	Ph.D.	2004
MIT	Chemical Engineering	M.S. (Practice School)	1999
MIT	Chemical Engineering	B.S.	1998

**Graduate Advisor:** Frank S. Bates, University of Minnesota**Postdoctoral Advisor:** Michael J. Fasolka and Eric J. Amis, NIST-Polymers Division**Current and Previous Appointments:**

Professor, UD, Dept. of Chemical & Biomolecular Engineering	2016 - present
Professor, UD, Dept. of Materials Science & Engineering	2016 - present
Associate Professor, UD, Dept. of Chemical & Biomolecular Engineering	2012 - 2016
Associate Professor, UD, Dept. of Materials Science & Engineering	2012 - 2016
Affiliated Faculty Member, UD, Dept. of Biomedical Engineering	2012 - present
Assistant Professor, UD, Dept. of Materials Science & Engineering	2011 - 2012
Member, Center for Fuel Cell Research (CFCR)	2010 - present
Member, Center for Molecular and Engineering Thermodynamics (CMET)	2009 - present
Faculty Member, UD, Center for Neutron Science (CNS)	2007 - present
Affiliated Faculty Member, Delaware Biotechnology Institute (DBI)	2006 - present
Assistant Professor, UD, Dept. of Chemical & Biomolecular Engineering	2006 - 2012

**Awards and Honors:**

American Chemical Society (ACS) Expert, 2017

National Academy of Engineering (NAE) Arab-US, Frontiers of Engineering Participant, 2016

University of Notre Dame, Dept. of Chemical and Biomolecular Engineering, Thiele Lectureship, 2016

University of Massachusetts, Amherst - Graduate Student of Diversity Lectureship, 2016

John H. Dillon Medal, American Physical Society (APS), 2016

Owens Corning Young Investigator Award, AIChE, 2015

Kavli Fellow, National Academy of Sciences, 2014

National Academy of Sciences (NAS) Japan-US, Frontiers of Science Participant, 2014

Sigma Xi Young Investigator Award, 2014

National Academy of Engineering (NAE) US-EU, Frontiers of Engineering Participant, 2013

Thomas and Kipp Gutshall Chair of Chemical &amp; Biomolecular Engineering (UD), 2012

Martin Luther King, Jr. Visiting Professor Award (MIT), 2012

UD Gerard J. Mangone Best Young Scholar Award (Alison Young Professor), 2011

DuPont Young Professor Award, 2010

PECASE Award - Department of Defense (AFOSR), 2009

Outstanding Junior Faculty Award, University of Delaware, College of Engineering, 2009

Air Force Young Investigator Award, 2009

National Academy of Engineering (NAE), Frontiers of Engineering Participant, 2008

DOW Distinguished Lecturer, UC Santa Barbara, 2007

Lloyd Ferguson Young Scientist Award (NOBCCHE), 2007

National Science Foundation (NSF) CAREER Award, 2007

Gordon Research Conference (GRC) Carl Storm Fellowship, 2005

National Research Council Postdoctoral Fellowship, 2004

Bell Labs, Lucent Technologies, Corporate Research Ph.D. Fellowship, 1999

NSF Graduate Fellowship, 1999 (declined for Lucent Fellowship)  
GEM Ph.D. Fellowship, 1999 (declined for Lucent Fellowship)  
GEM Master's Fellowship, 1998  
MIT 1K Entrepreneurial Winner for Natural Electric (NatEl) hydropower, 1998  
American Chemical Society Scholarship Award, 1995

### **Peer-Reviewed Publications:**

Numbers in brackets are based on Google Scholar citations as of February 17, 2017

Underlined names are undergraduate coauthors.

1. [171] Bailey, T. S.; **Epps, T. H., III**; Bates, F. S. *Macromolecules* **2002**, *35*, 7007-7017. "A noncubic triply periodic network morphology in poly(isoprene-*b*-styrene-*b*-ethylene oxide) copolymers."
2. [93] **Epps, T. H., III**; Bailey, T. S.; Pham, H. D.; Bates, F. S. *Chemistry of Materials* **2002**, *14*, 1706-1714. "Phase Behavior of Lithium Perchlorate-Doped Poly(styrene-*b*-isoprene-*b*-ethylene oxide) Triblock Copolymers."
3. [129] **Epps, T. H., III**; Bailey, T. S.; Waletzko, R. S.; Bates, F. S. *Macromolecules* **2003**, *36*, 2873-2881. "Phase Behavior and Block Sequence Effects in Lithium Perchlorate-Doped Poly(isoprene-*b*-styrene-*b*-ethylene oxide) and Poly(styrene-*b*-isoprene-*b*-ethylene oxide) Triblock Copolymers."
4. [102] **Epps, T. H., III**; Cochran, E. W.; Hardy, C. M.; Bailey, T. S.; Waletzko, R. S.; Bates, F. S. *Macromolecules* **2004**, *37*, 7085-7088. "Network Phases in ABC Triblock Copolymers."
5. [144] **Epps, T. H., III**; Cochran, E. W.; Bailey, T. S.; Waletzko, R. S.; Hardy, C. M.; Bates, F. S. *Macromolecules* **2004**, *37*, 8325-8341. "Ordered Network Phases in Linear Poly(isoprene-*b*-styrene-*b*-ethylene oxide) Triblock Copolymers."
6. [26] **Epps, T. H., III**; Chatterjee, J.; Bates, F. S. *Macromolecules* **2005**, *38*(21), 8775-8784. "Phase Transformations Involving Network Phases in ISO Triblock Copolymer-Homopolymer Blends."
7. [37] **Epps, T. H., III**; Bates, F.S. *Macromolecules* **2006**, *39*(7), 2676-2682. "Effect of Molecular Weight on Network Formation in Linear ABC Triblock Copolymers."
8. [119] Stafford, C.M.; Roskov, K.E.; **Epps, T. H., III**; Fasolka, M.J. *Review of Scientific Instruments* **2006**, *77*(2), 0239081-0239087. "Generating Thickness Gradients of Thin Polymer Films via Flow Coating."
9. [65] **Epps, T. H., III**; DeLongchamp, D. M.; Fasolka, M. J.; Fischer, D. A.; Jablonski, E. L. *Langmuir*, **2007**, *23*(6); 3355-3362. "Substrate Surface Energy Dependent Morphology and Dewetting in an ABC Triblock Copolymer Film." (**corresponding author**)
10. [30] Young, W.; Brigandi, P. J.; **Epps, T. H., III**, *Macromolecules*, **2008**, *41*(17); 6276-6279. "Crystallization-Induced Lamellar-to-Lamellar Thermal Phase Transitions in Salt-Doped Polymer Electrolytes." (**corresponding author**)
11. [38] Pathak, J. A.; Ho, D. L.; Lin, E. K.; Vukmir, M. K.; **Epps, T. H., III**; Roland, C. M. *Macromolecules*, **2008**, *41*(20); 7543-7548. "Structure Evolution in a Polyurea Segmented Block Copolymer Because of Mechanical Deformation."
12. [13] Roskov, K. E.; **Epps, T. H., III**; Berry, B. C.; Hudson, S. D.; Tureau, M. S.; Fasolka, M. J., *Journal of Combinatorial Chemistry*, **2008**, *10*(6); 966-973. "Preparation of Combinatorial Arrays of Polymer Thin Films for Transmission Electron Microscopy Analysis."
13. [94] Young, W.; **Epps, T. H., III**. *Macromolecules*, **2009**, *42*(7); 2672-2678. "Salt Doping in PEO-Containing Block Copolymers: Counterion and Concentration Effects." (**corresponding author**)

14. [29] Singh, N.; Tureau, M. S.; **Epps, T. H., III**. *Soft Matter*, **2009**, 5(23) 4757-4762. "Manipulating Ordering Transitions in Interfacially Modified Block Copolymers." (*corresponding author*)  
\*Highlighted in Brookhaven National Lab Research Newsletter\*
15. [36] Stefik, M.; Mahajan, S.; Sai, H.; **Epps, T. H., III**; Bates, F.S.; Gruner, S. M.; DiSalvo, F. J.; U. Wiesner. *Chemistry of Materials*, **2009**, 21(22), 5466-5473. "Ordered three- and five-ply nanocomposites from ABC block terpolymer microphase separation with niobia and aluminosilicate sols."
16. [45] Albert, J. N. L.; Baney, M. J.; Stafford, C. M.; Kelly, J. Y.; **Epps, T. H., III**. *ACS Nano*, **2009**, 3(12), 3977-3986. "Generation of Monolayer Gradients in Surface Energy and Surface Chemistry for Block Copolymer Thin Film Studies." (*corresponding author*)
17. [10] Tureau, M. S.; **Epps, T. H., III**. *Macromolecular Rapid Communications*, **2009**, 30(20) 1751-1755. "Nanoscale Networks in Poly(isoprene-b-styrene-b-methyl methacrylate) Triblock Copolymers." (*corresponding author*)
18. [255] Albert, J. N. L.; **Epps, T. H., III**. *Materials Today*, **2010**, 13(6) 24-33. (*invited review article*)  
"Self-Assembly of Block Copolymer Thin Films." (*corresponding author*)
19. [22] Tureau, M. S.; Rong, L.; Hsiao, B.; **Epps, T. H., III**. *Macromolecules*. **2010**, 43(21), 9039-9048. "Phase Behavior of Neat Triblock Copolymers and Copolymer/Homopolymer Blends Near Network Phase Windows." (*corresponding author*)
20. [0] Tsui, O. K. C., **Epps, T. H., III**. *Journal of Polymer Science: Part B - Polymer Physics*. **2010**, 48(24), 2531-2532. "The American Physical Society Division of Polymer Physics Special Issue Introduction." (*corresponding author*)
21. [17] Kelly, J. Y.; Albert, J. N. L.; Howarter, J. A.; Kang, S.; Stafford, C. M.; **Epps, T. H., III**; Fasolka, M. J. *ACS Applied Materials & Interfaces*. **2010**, 2(11), 3241-3248. "Investigation of Thermally Responsive Block Copolymer Thin Film Morphologies Using Gradients." (*corresponding author*)
22. [73] Albert, J. N. L.; Bogart, T. D.; Lewis, R. L.; Beers, K. L.; Fasolka, M. J.; Hutchison, J. B.; Vogt, B. V.; **Epps, T. H., III**. *Nano Letters*, **2011**, 11(3), 1351-1357. "Gradient Solvent Vapor Annealing of Block Copolymer Thin Films Using a Microfluidic Mixing Device." (*corresponding author*)
23. [28] Roy, R.; Park, J. K.; Young, W.; Mastroianni, S.; Tureau, M. S.; **Epps, T. H., III**. *Macromolecules*, **2011**, 44(10), 3910-3915. "Double-Gyroid Network Morphology in Tapered Diblock Copolymers." (*corresponding author*)
24. [25] Kelley, E. G.; Smart, T. P.; Jackson, A. J.; Sullivan, M. O.; **Epps, T. H., III**. *Soft Matter*, **2011**, 7(15), 7094-7102. "Structural changes in block copolymer micelles induced by cosolvent mixtures." (*corresponding author*)
25. [7] Albert, J. N. L.; Kim, J.; Stafford, C. M.; **Epps, T. H., III**. *Review of Scientific Instruments*, **2011**, 82, 0651031-0651037. "Controlled Vapor Deposition Approach to Generating Substrate Surface Energy/Chemistry Gradients." (*corresponding author*)  
\*Highlighted in Journal of Biological Physics Research\*
26. [68] Lu, A.; Smart, T. P.; **Epps, T. H., III**; Longbottom, D. A.; O'Reilly, R. K., *Macromolecules*, **2011**, 44(18), 7233-7241. "L-Proline functionalized polymers prepared by RAFT polymerization and their assemblies as supported organocatalysts."
27. [37] Young, W.; Albert, J. N. L.; Schantz, A. B.; **Epps, T. H., III**, *Macromolecules*, **2011**, 44(20), 8116-8123. "Mixed-salt Effects on the Ionic Conductivity of Lithium-doped PEO-containing Block Copolymers." (*corresponding author*)

28. [64] Lee, C.; Smart, T. P.; Guo, L.; **Epps, T. H., III**; Zhang, D., *Macromolecules*, **2011**, *44*(24), 9574-9585. "Synthesis and Characterization of Amphiphilic Cyclic Diblock Copolypeptoids from *N*-Heterocyclic Carbene-Mediated Zwitterionic Polymerization of *N*-Substituted *N*-Carboxyanhydride."
29. [9] Kelly, J. Y.; Albert, J. N. L.; Howarter, J. A.; Stafford, C. M.; **Epps, T. H., III**, Fasolka, M. J., *Journal of Polymer Science: Polymer Physics* **2012**, *50*(4), 263-271. "Manipulating Morphology and Orientation in Thermally-Responsive Block Copolymer Thin Films." (**corresponding author**)
30. [48] Patterson, J. P.; Sanchez, A. M.; Petzetakis, N.; Smart, T. P.; **Epps, T. H., III**; Portman, I.; Wilson, N. R.; O'Reilly, R. K., *Soft Matter* **2012**, *8*(12), 3322-3328. "A simple approach to characterizing block copolymer assemblies: graphene oxide supports for high contrast multi-technique imaging."  
**\*Front Cover Article\***  
**\*Top Ten Most-Download January 2012\***  
**\*Highlighted in Materials Today\***
31. [68] Albert, J. N. L.; Young, W.; Lewis, R. L., III; Bogart, T. D.; Smith, J.; **Epps, T. H., III**, *ACS Nano* **2012**, *6*(1), 459-466. "Systematic Study on the Effect of Solvent Removal Rate on the Morphology of Solvent Vapor Annealed ABA Triblock Copolymer Thin Films." (**corresponding author**)
32. [21] Labiano, A.; Dai, M.; Young, W.-S.; Stein, G.; Cavicchi, K.; **Epps, T. H. III**; Vogt, B., *Journal of Physical Chemistry C* **2012**, *116*, 6038-6046. "Impact of Homopolymer Pore Expander on the Morphology of Mesoporous Carbon Films using Organic-Organic Self-Assembly."
33. [22] Kuan, W. F.; Roy, R.; Rong, L.; Hsiao, B.; **Epps, T. H., III**, *ACS Macro Letters* **2012**, *1*, 519-523. "Design and Synthesis of Network-Forming Triblock Copolymers Using Tapered Interfaces." (**corresponding author**)  
**\*Highlighted in ACS Noteworthy Chemistry online\***
34. [11] Labiano, A.; Dai, M.; Taylor, D.; Young, W.-S.; **Epps, T. H., III**, Rege, K.; Vogt, B. D., *Microporous and Mesoporous Materials* **2012**, *160*, 143-150. "Slow Release Kinetics of Mitoxantrone from Ordered Mesoporous Carbon Films."
35. [54] Young, W.; **Epps, T. H., III**, *Macromolecules* **2012**, *45*(11) 4689-4697. "Ionic Conductivities of Block Copolymer Electrolytes with Various Conducting Pathways: Sample Preparation and Processing Considerations." (**corresponding author**)
36. [6] Tureau, M. S.; Kuan, W. F.; Rong, L.; Hsiao, B. H.; **Epps, T. H., III**, *Macromolecules* **2012**, *45*(11), 4599-4605. "Inducing Order from Disordered Copolymers: On Demand Generation of Triblock Morphologies Including Networks." (**corresponding author**)
37. [18] Mayeda, M. K.; Kuan, W. F.; Young, W. S.; Lauterbach, J. A.; **Epps, T. H., III**, *Chemistry of Materials* **2012**, *24*(14), 2627-2634. "Controlling Particle Location with Mixed Surface Functionalities in Block Copolymer Thin Films." (**corresponding author**)
38. [6] Tureau, M. S.; **Epps, T. H., III**, *Macromolecules* **2012**, *45*(20) 8347-8355. "Effect of Partial Hydrogenation on the Phase Behavior of Poly(isoprene-*b*-styrene-*b*-methyl methacrylate Triblock Copolymers." (**corresponding author**)
39. [32] Seppala, J. E.; Lewis, R. L., III; **Epps, T. H., III**, *ACS Nano* **2012**, *6*(11) 9855-9862. "Spatial and orientation control of cylindrical nanostructures in ABA triblock copolymer thin films by raster solvent vapor annealing (RSVA)." (**corresponding author**)
40. [17] Patterson, J. P.; Cotanda, P.; Kelley, E. G.; Moughton, A. O.; Lu, A.; **Epps, T. H., III**; O'Reilly, R. K., *Polymer Chemistry* **2013**, *4*, 2033-2039. "Catalytic Y-Shaped Amphiphilic Homopolymers - Aqueous nanoreactors for high activity, low loading SCS pincer catalysts"

41. [122] Kelley, E. G.; Albert, J. N. L.; Sullivan, M. O.; **Epps, T. H., III**, *Chemical Society Reviews* **2013**, 42, 7057-7071. **[invited tutorial review article]** "Stimuli-responsive copolymer solution and surface assemblies for biomedical applications." (**corresponding author**)  
**\*Front Cover Article\***
42. [21] Mastroianni, S.; **Epps, T. H., III**, *Langmuir* **2013**, 29(12), 3864-3878. (**invited feature article**) "Interfacial Manipulations: Controlling Nanoscale Assembly in Bulk, Thin Film, and Solution Block Copolymer Systems." (**corresponding author**)  
**\*Front Cover Article\***
43. [25] Petzetakis, N.; Robin, M. P.; Patterson, J. P.; Kelley, E. G.; Cotanda, P.; McHale, R.; Bomans, P. H. H.; Sommerdijk, N. A. J. M.; Dove, A. P.; **Epps, T. H., III**; O'Reilly, R. K., *ACS Nano* **2013**, 7(2), 1120-1128. "Hollow Block Copolymer Nanoparticles Through a Spontaneous One-Step Structural Reorganization." (**corresponding author**)
44. [22] Luo, M.; Seppala, J. E.; Albert, J. N. L.; Lewis, R. L., III; Mahadevapuram, N.; Stein, G. E.; **Epps, T. H., III**, *Macromolecules* **2013**, 46(5), 1803-1811. "Manipulating Nanoscale Morphologies in Cylinder-Forming Poly(styrene-*b*-isoprene-*b*-styrene) Thin Films Using Film Thickness and Substrate Surface Chemistry Gradients." (**corresponding author**)
45. [1] **Epps, T. H., III**; Mahanthappa, M. K.; *Journal of Polymer Science: Polymer Physics* **2013**, 51(7), 461-462. "From fundamental science to advanced technologies" (**co-corresponding author**)  
**\*Front Cover Article\***
46. [12] Patterson, J. P.; Kelley, E. G.; Murphy, Ryan P.; Moughton, A. O.; Robin, M. P.; Lu, A.; Colombani, O.; Chassenieux, C.; Cheung, D.; Sullivan, M. O.; **Epps, T. H., III**; O'Reilly, R. K., *Macromolecules* **2013**, 46(15), 6319-6325. "Structural Characterization of Amphiphilic Homopolymer Micelles Using Light Scattering, SANS, and Cryo-TEM." (**corresponding author**) *\*Patterson and Kelley are co-first authors*
47. [104] Theato, P.; Sumerlin, B. S.; O'Reilly, R. K.; **Epps, T. H., III**, *Chemical Society Reviews* **2013**, 42, 7055-7056. "Stimuli-Responsive Materials." (**co-corresponding author**)
48. [23] Emerson, J. A.; Toolan, D. T. W.; Howse, J. R.; Furst, E.M.; **Epps, T. H., III**, *Macromolecules* **2013**, 46(16), 6533-6540. "Determination of Solvent-Polymer and Polymer-Polymer Flory-Huggins Interaction Parameters for Poly(3-hexylthiophene) via Solvent Vapor Swelling." (**corresponding author**)
49. [121] Luo, M.; **Epps, T. H., III**, *Macromolecules* **2013**, 46(19), 7567-7579. (**invited viewpoint article**) "Directed Block Copolymer Thin Film Self-Assembly: Emerging Trends in Nanopattern Fabrication." (**corresponding author**)  
**\*Front Cover Article\***
50. [4] Mastroianni, S. E.; Patterson, J. P.; O'Reilly, R. K.; **Epps, T. H., III**, *Soft Matter* **2013**, 9(42), 10146-10154 "Poly(methyl methacrylate-block-vinyl-*m*-triphenylamine): synthesis by RAFT polymerization and melt-state self-assembly." (**corresponding author**)
51. [69] Young, W. S.; Kuan, W. F.; **Epps, T. H., III**, *Journal of Polymer Science: Part B - Polymer Physics* **2014**, 52(1), 1-16. **[invited review article]** "Block Copolymers for Rechargeable Lithium Batteries." (**corresponding author**)  
**\*Inside Cover Article\***
52. [20] Holmberg, A. L.; Stanzione, J. F., III; Wool, R. P.; **Epps, T. H., III**, *ACS Sustainable Chemistry and Engineering* **2014**, 2(4), 569-573. "A Facile Method for Generating Designer Block Copolymers from Functionalized Lignin Model Compounds." (**corresponding author**)

53. [15] Kelley, E. G.; Murphy, R. P.; Seppala, J. E.; Smart, T. P.; Hann, S. D.; Sullivan, M. O.; **Epps, T. H., III**, *Nature Communications* **2014** "Size evolution of highly amphiphilic macromolecular solution assemblies via a distinct bimodal pathway." (**corresponding author**) **DOI: 10.1038/ncomms4599**  
**\*Highlighted on NPR, Philadelphia Station (WHYY)\***  
**\*Highlighted in Argonne National Lab, Advanced Photon Source Newsletter\***
54. [19] Quadir, M. A.; Morton, S. W.; Deng, Z. J.; Shopsowitz, K. E.; Murphy, R. P.; **Epps, T. H., III**, Hammond, P. T., *Molecular Pharmaceutics* **2014**, *11*(7), 2420-2430. "PEG-polypeptide Block Copolymers as pH-responsive Endosome-Solubilizing Drug Nanocarriers."
55. [8] Green, M. D.; Foster, A. A.; Roy, R.; Lehr, R. M.; **Epps, T. H., III**; Sullivan, M. O., *Polymer Chemistry* **2014**, *5*, 5535-5541. "Catch and Release: Photocleavable Cationic Diblock Copolymers as a Potential Platform for Nucleic Acid Delivery." (**corresponding author**)  
**\*Front Cover Article\***
56. [1] Haq, E.; Toolan, D. T. W.; Emerson, J. A.; **Epps, T. H., III**; Howse, J. R.; Dunbar, A. D. F.; Ebbens, S. J. *Journal of Polymer Science: Part B - Polymer Physics* **2014**, *52*(15), 985-992. "Real Time Laser Interference Microscopy for Bar-Spread Polystyrene/Poly (methyl methacrylate) Blends"
57. [36] Holmberg, A. L.; Reno, K. H.; Wool, R. P.; **Epps, T. H., III**, *Soft Matter* **2014**, *10*, 7405-7424. **[invited review article]** "Biobased building blocks for the rational design of renewable block copolymers" (**corresponding author**)  
**\*Soft Matter Hot Article for Aug. 2014\***  
**\*Soft Matter #1 Most Read Article for Sept. 2014\***
58. [8] Murphy, R. P.; Kelley, E. G.; Rogers, S. A.; Sullivan, M. O.; **Epps, T. H., III**, *ACS Macro Letters* **2014**, *3*, 1106-1111. "Unlocking chain exchange between block polymer micelles at the air-water interface: influence of agitation method" (**corresponding author**)
59. [11] Foster, A. A.; Greco, C. T.; Green, M. D.; **Epps, T. H., III**; Sullivan, M. O. *Advanced Healthcare Materials* **2015** "Light-Mediated Activation of siRNA Binding and Release in Diblock Copolymer Assemblies for Controlled Gene Silencing" (**co-corresponding author**) **DOI: 10.1002/adhm.201400671**  
**\*Highlighted on Materials Views - <http://www.materialsviews.com/light-sensitive-polymers-controlled-gene-silencing/>\***
60. [12] Gilbert, J. B.; Luo, M.; Shelton, C.; Rubner, M. F.; Cohen, R. E.; **Epps, T. H., III** *ACS Nano* **2015**, *9*(1), 512-520. "Determination of Lithium Ion Distributions in Nanostructured Block Polymer Electrolyte Thin Films by XPS Depth Profiling" (**corresponding author**) *\*Gilbert and Luo are co-first authors*  
**\*Highlighted on Nanotechweb.org\***
61. [9] Cho, W.; Wu, J.; Shim, B. S.; Kuan, W. F.; Mastroianni, S. E.; Young, W. S.; Kuo, C.C.; **Epps, T. H., III**, Martin, D. C. *Physical Chemistry Chemical Physics* **2015**, *17*, 5115-5123. "Synthesis and Characterization of Bicontinuous Cubic Poly(3,4-ethylene dioxothiophene) Gyroid (PEDOT GYR) Gels"
62. [16] Kuan, W. F.; Remy, R.; Mackay, M. E.; **Epps, T. H., III** *RSC Advances* **2015**, *5*, 12597-12604. **[invited special issue on electrochemical storage]** "Controlled Ionic Conductivity via Tapered Block Polymer Electrolytes" (**corresponding author**)
63. [7] Mayeda, M. K.; Hayat, J.; **Epps, T. H., III**; Lauterbach, J., *Journal of Materials Chemistry A* **2015**, *3*, 7822-7829 "Metal Oxide Arrays from Block Copolymer Thin Film Templates" (**co-corresponding author**)
64. [10] Luo, M.; Scott, D. M.; **Epps, T. H., III** *ACS Macro Letters* **2015**, *4*, 516-520 "Writing Highly Ordered Macroscopic Patterns in Cylindrical Block Polymer Thin Films via Raster Solvent Vapor Annealing and Soft Shear" (**corresponding author**)

65. [3] Kuan, W. F.; Nguyen, N. A.; Reed, E. H.; Mackay, M. E.; Epps, T. H., III *MRS Communications* **2015**, 5(2), 251-256. **[invited special issue on polymers and soft matter]** “Using Tapered Interfaces to Manipulate Nanoscale Morphologies in Ion-Doped Block Polymers” (**corresponding author**)
66. [7] Holmberg, A. L.; Karavolias, M. G.; Epps, T. H., III *Polymer Chemistry* **2015**, 6, 5728-5739. “RAFT Polymerization and Associated Reactivity Ratios of Mixed Methacrylate-Functionalized Bio-oil Constituents” (**corresponding author**)  
**\*Highlighted in Polymer Chemistry Editorial\***
67. [10] Shelton, C. K.; Epps, T. H., III *Macromolecules* **2015**, 48(13), 4572-4580. “Decoupling Substrate Surface Interactions in Block Polymer Thin Film Self-Assembly.” (**corresponding author**)
68. [5] Shelton, C. K.; Epps, T. H., III *Macromolecules* **2016**, 49(2), 574-580, “Mapping Substrate Surface Field Propagation in Block Polymer Thin Films.” (**corresponding author**)
69. [13] Epps, T. H., III; O'Reilly, R. K. *Chemical Science* **2016**, 7(3), 1674-1689, **[invited perspective]**, “Block Copolymers: Controlling Nanostructure to Generate Functional Materials – Synthesis, Characterization, and Engineering.” (**co-corresponding author**)
70. [7] Holmberg, A. L.; Reno, K. H.; Nguyen, N. A.; Wool, R. P.; Epps, T. H., III *Macromolecules* **2016** 49(4), 1286-1295. “Softwood Lignin-Based Methacrylate Polymers with Tunable Thermal and Viscoelastic Properties.” (**corresponding author**)
71. [3] Holmberg, A. L.; Nguyen, N. A.; Karavolias, M. G.; Reno, K. H.; Wool, R.P.; Epps, T. H., III *ACS Macro Letters* **2016** 5(5), 574-578. “Syringyl Methacrylate, a Hardwood Lignin-Based Monomer for High-T<sub>g</sub> Polymeric Materials.” (**corresponding author**)
72. Shelton, C. K.; Epps, T. H., III *Polymer* **2016** **[invited review]** 105, 545-561. “Block copolymer thin films: Characterizing nanostructure evolution with *in situ* X-ray and neutron scattering.” (**corresponding author**)
73. [1] Luo, M.; Brown, J. R.; Remy, R. A.; Scott, D. M.; Mackay, M. E.; Hall, L. M.; Epps, T. H., III *Macromolecules* **2016** 49(14), 5213-5222. “Determination of Interfacial Mixing in Tapered Block Polymer Thin Films: Experimental and Theoretical Investigations.” (**corresponding author**)
74. [1] Greco, C. T.; Epps, T. H., III, Sullivan, M. O. *ACS Biomaterials Science and Engineering* **2016** 2(9), 1582-1594. “Mechanistic Design of Polymer Nanocarriers to Spatiotemporally Control Gene Silencing” (**co-corresponding author**)
75. [3] Shelton, C. K.; Jones, R. L.; Dura, J. A.; Epps, T. H., III *Macromolecules* **2016** 49(19), 7525-7534. “Tracking Solvent Distribution in Block Polymer Thin Films during Solvent Vapor Annealing with *In Situ* Neutron Scattering.” (**corresponding author**)
76. [0] Gartner, T. E.; Epps, T. H., III, Jayaraman, A. *Journal of Chemical Theory and Computation* **2016** 12(11), 5501-5510. “Leveraging Gibbs Ensemble Molecular Dynamics and Hybrid Monte Carlo/Molecular Dynamics for Efficient Study of Phase Equilibria” (**co-corresponding author**)
77. Gartner, T. E.; Morris, M. A.; Epps, T. H., III *Macromolecular Chemistry and Physics* **2017** (invited talent article, in press) “TALENT: Regulating Block Polymer Structure, Properties, and Processability for Nanostructured Materials Systems” (**corresponding author**)
78. Greco, C. T.; Muir, V. G.; Epps, T. H., III, Sullivan, M. O. *Acta Biomaterialia* **2017** (in press), “Efficient tuning of siRNA dose response by combining mixed polymer nanocarriers with simple kinetic modeling” (**co-corresponding author**)

79. Greco, C. T.; **Epps, T. H., III**, Sullivan, M. O. *Journal of Visualized Experiments* **2017** (revision submitted) "Predicting Gene Silencing through the Spatiotemporal Control of siRNA Release from Photo-Responsive Polymeric Nanocarriers" (**co-corresponding author**)

#### **Edited Journals:**

Guest Editor for special issue of *Journal of Polymer Science, Part B: Polymer Physics* (Wiley) highlighting research from DPOLY at the American Physical Society March 2010 Meeting

Guest Editor for special issue of *Journal of Polymer Science, Part B: Polymer Physics* (Wiley) Young Investigator APS DPOLY Issue; March 2013

Guest Editor for special issue of *Chemical Society Reviews* (Royal Society of Chemistry) titled: "Stimuli-Responsive Materials;" August 2013

#### **Recent Patents and Patent Applications:**

Angela L. Holmberg, Joseph F. Stanzione, III, Richard P. Wool, and **Thomas H. Epps, III**, "Bio-Based Block Polymers Derived from Lignin and Fatty Acids." *U.S. Pat. #9,512,249 – Assigned 12/6/2016*

Michael K. Mayeda, Jochen Lauterbach, and **Thomas H. Epps, III**, "Templating Metal Oxide Arrays with Block Copolymer Thin Films." *U.S. Prov. Pat. Appl. 61/980692*, filed Apr. 17, 2014.

Wei-Fan Kuan and **Thomas H. Epps, III**, "Tapered Block Copolymer Electrolytes." *U.S. Pat. Appl. 14592441* filed on Jan. 8, 2015.

Angela L. Holmberg, Kaleigh H. Reno, and **Thomas H. Epps, III**, "New Biobased Hardwood Monomers for Tuning Polymer Properties." *U.S. Prov. Pat. Appl. 62/191551*, filed July 13, 2015. Patent application filed July 11, 2016

Ming Luo and **Thomas H. Epps, III**, "Patterning Block Copolymer Nanostructures Via Raster Solvent Vapor Annealing and Soft Lithography." *U.S. Prov. Pat. Appl. 62/264983*, filed Dec. 9, 2015.

Cameron M. Shelton and **Thomas H. Epps, III**, "One-Step, Continuous Device and Approach to Solvent Cast and Shear-Align Block Copolymer Thin Film Nanostructures" *U.S. Prov. Pat. Appl. 62/264986*, filed Dec. 9, 2015. *U.S. Pat. Appl.* filed on Dec. 8, 2016

Chad T. Greco, Millicent O. Sullivan, **Thomas H. Epps, III**, "Hybrid Formulation of Responsive Polymeric Nanocarriers for Therapeutic and Diagnostic Delivery." *U.S. Prov. Pat. Appl. 62/362085*, filed July 14, 2016.

#### **Invited Conference Presentations:**

1. American Chemical Society National Meeting, August 2007, Boston, MA  
**Invited Speaker** "Gradient Approaches to the Examination of Surface Energy Effects on Triblock Copolymer Thin Films"
2. Transatlantic Frontiers of Chemistry Symposium, August 2008, Cheshire, UK  
**Invited Poster Presenter** "Gradient Approaches to the Examination of Surface Energy Effects on Block Copolymer Thin Films"
3. National Academy of Engineering, Frontiers in Engineering Symposium, September 2008, Albuquerque, NM  
**Invited Participant**
4. American Chemical Society National Meeting, March 2009, Salt Lake City, UT  
**Invited Speaker** "Salt doping in PEO-containing block copolymers: counterion and concentration effects"



5. Gordon Research Conference (GRC), Polymers East, June 2009, South Hadley, MA  
**Invited Lecturer** "Manipulating Ordering in Block Copolymer Systems Using Interface Modifications"
6. NOBCCChE Northeast Regional Meeting at MIT, October 2009, Cambridge, MA  
**Invited Lecturer** "Functional Nanoscale Materials from Block Copolymers"
7. Gordon Research Conference (GRC), Colloidal, Macromolecular & Polyelectrolyte Solutions, February 2010, Ventura, CA  
**Discussion Leader** "Ions in Polymers"
8. American Chemical Society National Meeting, March 2010, San Francisco, CA  
**Invited Speaker** "Surface Energy and Annealing Effects on Block Copolymer Thin Films"
9. American Chemical Society National Meeting, August 2010, Boston, MA  
**Invited Speaker** [M. Stefik, Akzo Nobel Graduate Student Symposium] "Networked Nanocomposites Derived from Block Terpolymers" [U. Wiesner graduate student]
10. American Chemical Society National Meeting, August 2010, Boston, MA  
**Invited Speaker** [J. Albert, Akzo Nobel Graduate Student Symposium] "Surface Energy/Chemistry Gradients for Block Copolymer Thin Film Studies"
11. AFOSR Organic Materials Chemistry and Molecular Design and Synthesis Programs Review, September 2010, National Harbor, MD  
**Invited Speaker** "Ion-Conducting Network Membranes Using Tapered Block Copolymers"
12. Pacifichem 2010, December 2010, Honolulu, HI  
**Invited Speaker** "Using Interfacial Manipulations to Control Ordering in Block Copolymers"
13. American Chemical Society National Meeting, March 2011, Anaheim, CA  
**Invited Speaker** "Manipulating the Interfacial Regions of Self-Assembled Block Copolymer Structures"
14. High Polymer Research Group 51<sup>st</sup> Meeting, April 2011, Pott Shrigley, Cheshire, UK  
**Invited Poster Presenter** "Manipulating Self-Assembled Block Copolymer Structures"
15. AFOSR Organic Materials Chemistry and Molecular Design and Synthesis Programs Review, May 2011, National Harbor, MD  
**Invited Poster Presenter** "Ion-Conducting Network Membranes Using Tapered Block Copolymers"
16. Gordon Research Seminar (GRS), Polymers East, June 2011, South Hadley, MA  
**Invited Speaker** [E. Kelley] "Synthesis and self-assembly of bio-responsive block copolymers"
17. NSTI Nanotech 2011, June 2011, Boston, MA  
**Invited Speaker** "Manipulating the Interfacial Regions of Self-Assembled Block Copolymer Structures"
18. Pacific Polymer Conference 2011, November 2011, Jeju Island, Korea  
**Invited Speaker** "Controlling Block Copolymer Interactions Using Tapering to Stabilize Networks"
19. Mid-Atlantic Soft Matter Conference 8, December 2011, Gaithersburg, MD  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
20. Gordon Research Conference (GRC), Colloidal, Macromolecular & Polyelectrolyte Solutions, February 2012, Ventura, CA  
**Invited Lecturer** "Block Copolymer Assemblies for Ion-Conduction Applications"

21. American Chemical Society (ACS) National Meeting, March 2012, San Diego, CA  
**Invited Speaker** *Paul Flory Award Symposium to honor Prof. Bob Cohen* “Designer Nanoscale Materials: Interfacial Manipulations in Block Copolymer Systems”
22. High Polymer Research Group 52<sup>nd</sup> Meeting, April 2012, Pott Shrigley, Cheshire, UK  
**Invited Poster Presenter** “Using Interfacial Manipulations to Control Self-Assembly in Block Copolymers”
23. IUPAC World Polymer Congress, June 2012, Blacksburg, VA  
**Invited Speaker** “Interfacial modification in self-assembled block copolymers”
24. Warwick Polymers Conference 2012, July 2012, Warwick, UK  
**Invited Lecturer** “Designer Nanoscale Materials: Interfacial Manipulations in Block Copolymer Systems”
25. Gordon Research Conference (GRC), Polymer Physics, July 2012, Holyoke, MA  
**Invited Lecturer** “Interfacial Manipulations: Controlling Ordering in Bulk and Thin Film Block Copolymers”
26. American Institute of Chemical Engineers (AIChE) Annual Meeting, October 2012, Pittsburgh, PA  
**Invited Speaker (Julie Albert)** *Nanostructured Thin Films* “Manipulating Nanoscale Ordering in Block Copolymer Thin Films”
27. Gordon Research Seminar (GRS), Macromolecular Materials, January 2013, Ventura, CA **Invited Speaker (Matt Green)** “Solution assemblies of block copolymers for nucleic acid and drug delivery”
28. Gordon Research Conference (GRC), Macromolecular Materials, January 2013, Ventura, CA  
**Invited Lecturer** “Manipulating nanostructures in block copolymers: Linking morphology to performance in conducting systems”
29. High Polymer Research Group 53<sup>rd</sup> Meeting, April 2013, Pott Shrigley, Cheshire, UK  
**Invited Poster Presenter** “Designer Nanostructured Plastics from Block Copolymers”
30. Gordon Research Seminar (GRS), Polymers East, June 2013, South Hadley, MA  
**Invited Speaker [E. Kelley]** “Bio-responsive Block Copolymer for Targeted Drug Delivery”
31. International Conference on Advanced Polymers via Macromolecular Engineering (APME), August 2013, Durham, UK  
**Invited Lecturer** “Using Tapered Block Copolymers to Create Conducting Nanomaterials”
32. American Chemical Society (ACS) National Meeting, September 2013, Indianapolis, IN  
**Invited Speaker** *Stimuli-Responsive Polymers* “Controlled targeting ligand display in polymer-peptide bioconjugates for drug delivery”
33. American Chemical Society (ACS) National Meeting, September 2013, Indianapolis, IN  
**Invited Speaker** *Mark Young Scholars Award in honor of Rachel O'Reilly* “Manipulating thermodynamics through tapering: Tunable control of block copolymer ordering”
34. International Symposium on Stimuli-Responsive Materials, October 2013, Santa Rosa, CA  
**Invited Lecturer** “Amphiphilic Copolymers - Controlling Stability in Solution Assemblies”
35. American Institute of Chemical Engineers (AIChE) Annual Meeting, November 2013, San Francisco, CA  
**Invited Plenary Lecturer in MESD** “Tuning Block Copolymer Solution Assemblies through Manipulation of Interfacial Interactions”

36. National Academy of Engineering (NAE) US-EU, Frontiers of Engineering, November 2013, Chantilly, FR  
**Invited Poster Presenter** “Materials Innovation Using Nanostructured Plastics”
37. American Physical Society (APS) March Meeting, March 2014, Denver, CO  
**Invited Speaker** *Polymers for Energy Storage and Conversion* “Using Tapered Block Copolymers to Create Conducting Nanomaterials”
38. NIST-UD Center for Neutron Science, Annual Meeting, March 2014, Newark, DE  
**Invited Speaker** “Shaken or Stirred: New Insights into Block Copolymer Solution Assembly”
39. University of Minnesota Block Polymers 2014 Symposium, April 2014, Minneapolis, MN **Invited Lecturer** “Shaken or Stirred: New Insights into Block Copolymer Solution Assembly”
40. International Symposium on Stimuli-Responsive Materials, October 2014, Santa Rosa, CA  
**Invited Lecturer** “Photo-Responsive Block Copolymers for Gene Therapy”
41. Sigma Xi Annual Meeting, November 2014, Phoenix, AZ  
**Plenary Young Investigator Award Lecture** “Creating Functional Nanoscale Systems Using Block Copolymers: Impacting Sustainability and Human Health through Self-Assembly”
42. American Institute of Chemical Engineers (AIChE) Annual Meeting, November 2014, Atlanta, GA  
**Invited Speaker** “Controlled Self-Assembly and Ionic Conductivity Via Interfacial Modification of Lithium-Doped Block Polymers”
43. National Academy of Sciences (NAS) Japan-US, Frontiers of Science, December 2014, Tokyo, Japan  
**Invited Poster Presenter** “Nanostructured Polymers for Improving Sustainability, Human Health, and the Environment”
44. GRC, Polymers East 2015, June 2015, South Hadley, MA  
**Invited Speaker** [Angela Holmberg] “RAFT Polymerization of Complex Mixtures in Pursuit of Sustainable Polymers from Bio-Oils”
45. Functional Polymeric Materials Conference, August 2015, Ascot, UK  
**Invited Speaker** “Tapered block copolymers: Controlling segment sequence to improve materials properties”
46. American Chemical Society (ACS) National Meeting, August 2015, Boston, MA  
**Invited Speaker** “Manipulating solution-assembled and stimuli-responsive copolymer nanostructures for nucleic acid delivery and gene silencing”
47. American Chemical Society (ACS) National Meeting, August 2015, Boston, MA  
**Invited Speaker** “Tapered block copolymers: Controlling segment sequence to improve materials properties”
48. American Institute of Chemical Engineers (AIChE) National Meeting, November 2015, Salt Lake City, UT  
**Invited Speaker** “Manipulating Ordering and Orientation in Nanostructured Thin Films by Combining Substrate and Solvent Annealing Effects”
49. American Institute of Chemical Engineers (AIChE) National Meeting, November 2015, Salt Lake City, UT  
**Plenary Lecture – Owens Corning Award** “Functional Nanoscale System Using Block Polymers: Impacting Sustainability and Human Health through Self-Assembly”

50. American Institute of Chemical Engineers (AIChE) National Meeting, November 2015, Salt Lake City, UT  
**Invited Speaker [Angela Holmberg] – Graduate Student Award Session** “Biobased Polymers from Multicomponent Mixtures for Tuning Properties and Reducing Costs”
51. Pacific Polymer Conference 14, December 2015, Kauai, HI  
**Invited Speaker** “High-throughput and Gradient Approaches to Manipulating Ordering and Orientation in Nanostructured Thin Films”
52. Pacificchem 2015, December 2015, Honolulu, HI  
**Invited Speaker** “Tapered block copolymers: Controlling segment sequence to improve materials properties”
53. American Chemical Society (ACS) National Meeting, March 2016, San Diego, CA  
**Invited Speaker** “Manipulating ordering and orientation in nanostructured thin films by combining substrate and solvent annealing effects”
54. American Physical Society (APS) National Meeting, March 2016, Baltimore, MD  
**John H. Dillon Medal Plenary Speaker** “Tapered Block Copolymers: Tuning Self-Assembly and Properties by Manipulating Monomer Segment Distributions”
55. American Chemical Society (ACS) National Meeting, March 2016, San Diego, CA  
**Invited Speaker** “Generating complex self-assemblies from block polymers: Triply-periodic structures from anionic polymerization”
56. Sustainable Polymers II, ACS Division of Polymer Chemistry, May 2016, Clearwater, FL  
**Invited Speaker** “Lignin-based block polymers for thermoplastics applications”
57. Warwick Polymers Conference 2016, July 2016, Warwick, UK  
**Invited Lecturer** “Tapered block copolymers: Controlling segment sequence to improve materials properties”
58. Gordon Research Conference (GRC), Polymer Physics, July 2016, Holyoke, MA  
**Discussion Leader** “Block Copolymer Thin Films”
59. Gordon Research Conference (GRC), Membranes: Materials and Processes, July 2016, New London, NH  
**Invited Opening Plenary Lecture** “Engineering nanostructured membranes through macromolecular design: Tapered block copolymers for lithium battery electrolytes”
60. American Chemical Society (ACS) National Meeting, August 2016, Philadelphia, PA  
**Invited Speaker** “Engineering sequence control through tapered block copolymers to manipulate materials properties”
61. VI Leopoldo Garcia-Colon Mexican Meeting on Mathematical and Experimental Physics 2016, September 2016, Mexico City, Mexico  
**Invited Lecturer** “Tapered Block Copolymers: Manipulating Monomer Segment Distributions to Control Structure and Enhance Performance”
62. National Academy of Engineering (NAS) Arab-US, Frontiers of Engineering, November 2016, Abu Dhabi  
**Invited Poster Presenter** “Nanostructured Polymers for Improving Sustainability, Human Health, and the Environment”
63. High Polymer Research Group Conference 2017, April 2017, Pott Shrigley, UK  
**Invited Lecturer** “Tapered Block Copolymers: Manipulating Monomer Segment Distributions to Control Structure and Enhance Performance”

64. Gordon Research Conference (GRC), Polymers, July 2017, South Hadley, MA  
**Invited Lecturer** "TBD"
65. American Chemical Society (ACS) National Meeting, August 2017, Washington, D.C.  
**Invited Speaker** "Block copolymers as photo-responsive nanocontainers for spatiotemporal control over nucleic acid delivery"
66. American Chemical Society (ACS) National Meeting, August 2017, Washington, D.C.  
**Invited Speaker** "Title TBD (nanostructured thin films)"
67. American Chemical Society (ACS) National Meeting, August 2017, Washington, D.C.  
**Invited Speaker** "Title TBD (biobased polymers)"
68. Pacific Polymer Conference 15, December 2017, Xiamen, China  
**Invited Speaker** "TBD"

**Invited Lectures, Seminars, and Panels since May 2006:**

1. NIST Combinatorial Methods Center Annual Meeting, May 2006, Gaithersburg, MD  
**Invited Speaker** "Combinatorial Studies of Block Copolymer Interactions with Surfaces"
2. Delaware State University (Department of Chemistry), September 2006, Dover, DE  
**Invited Speaker** "Block Copolymers: A Feasible Route to Generating Nano-Materials"
3. Delaware Biotechnology Institute, December 2006, Newark, DE  
**Invited Speaker** "Block Copolymer Networks: Potential Bioseparations Membranes?"
4. National Academy of Sciences, January 2007, Washington, D.C.  
**Invited Moderator** "Forgotten Genius: NOVA's Film Biography of Dr. Percy Julian" (non-technical)
5. Goodyear Tire and Rubber Company, July 2007, Akron, OH  
**Invited Speaker** "Block Copolymers: A Feasible Route to Generating Functional Nano-materials"
6. University of California at Santa Barbara (UCSB), Dow Foundation Lecture, October 9, 2007, Santa Barbara, CA  
**Invited Lecturer** "Combinatorial Studies of Surface Interactions in Block Copolymer Thin Films"
7. University of Delaware, Chemistry Teachers Day Lecture, October 12, 2007, Newark, DE  
**Invited Speaker** "Using Synthetic Macromolecules as Precursors to Functional Membranes"
8. University of Sydney, Key Centre for Polymer Colloids, December 17, 2007, Sydney, Australia  
"Combinatorial Studies of Surface Interactions in Block Copolymer Thin Films"
9. New Jersey Institute of Technology (NJIT), January 28, 2008, Newark, NJ  
**Invited Speaker** "Combinatorial Studies of Surface Interactions in Block Copolymer Thin Films"
10. Virginia Commonwealth University (VCU), February 27, 2008, Richmond, VA  
**Invited Speaker** "Block Copolymers: A Feasible Route to Generating Functional Nano-materials"
11. Auburn University, Functional Polymers Symposium, May 1, 2008, Auburn, AL  
**Invited Lecturer** "Block Copolymers: A Feasible Route to Generating Functional Nano-materials"
12. University of Massachusetts, Amherst (Polymer Science and Engineering), April 24, 2009, Amherst, MA  
**Invited Speaker** "Block Copolymers: A Route to Ion-Conducting Nano-materials"

13. Dow Chemical, May 21, 2009, Midland, MI  
**Invited Speaker** "Block Copolymers: A Route to Functional Nano-materials"
14. University of Akron (Polymer Science), September 18, 2009, Akron, OH  
**Invited Speaker** "Generating Nanostructured Functional Materials Using Block Copolymers"
15. Massachusetts Institute of Technology (MIT) (Chemical Engineering), October 24, 2009, Cambridge, MA  
**Invited Panelist** - ACCESS Alumni Panel
16. Virginia Section of the American Chemical Society, December 4, 2009, Richmond, VA  
**Invited Speaker** "Using Block Copolymer to Create Functional Nanomaterials"
17. DuPont (Experimental Station), January 14, 2010, Wilmington, DE  
**Invited Speaker** "Surface Responsive Block Copolymer Thin Films"
18. Delaware State University (Department of Chemistry), January 21, 2010, Dover, DE  
**Invited Speaker** "Using Block Copolymer to Create Functional Nanomaterials"
19. Yale University (Chemical Engineering), July 2, 2010, New Haven, CT  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
20. University of Florida (Materials Science), September 7, 2010, Gainesville, FL  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
21. Case Western Reserve University (Macromolecular Science and Engineering), October 1, 2010, Cleveland, OH  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
22. University of Southern Mississippi (Polymer Science and Engineering), October 6, 2010, Hattiesburg, MS  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
23. Tulane University (Chemistry), October 7, 2010, New Orleans, LA  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
24. Louisiana State University (Chemistry), October 8, 2010, Baton Rouge, LA  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
25. University of Colorado at Boulder (Chemical and Biological Engineering), October 12, 2010, Boulder, CO  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
26. North Carolina State University (Chemical and Biological Engineering), October 18, 2010, Raleigh, NC  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"

27. Penn State University (Polymer Physics Seminar Series), November 16, 2010, State College, PA  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
28. Princeton University (Chemical and Biological Engineering), December 8, 2010, Princeton, NJ  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
29. Rensselaer Polytechnic Institute (Chemistry and Chemical Biology), January 25, 2011, Troy, NY  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
30. Massachusetts Institute of Technology [MIT] (Polymer Science and Technology [PPST]), February 2, 2011, Cambridge, MA  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
31. University of Delaware (Materials Science and Engineering), February 9, 2011, Newark, DE  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
32. Southern Methodist University (Chemistry), March 25, 2011, Dallas, TX  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
33. University of Sheffield (Chemistry), April 14, 2011, Sheffield, UK  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
34. University of Warwick (Chemistry), April 15, 2011, Warwick, UK  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
35. Future Faculty Workshop: Diverse Leaders of Tomorrow, June 20, 2011, Cambridge, MA  
**Invited Speaker** "Controlled Generation of Functional Materials from Nanostructured Polymers"
36. Iowa State University (Chemical Engineering), September 15, 2011, Ames, IA  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
37. Korea University (Chemical & Biological Engineering), November 17, 2011, Seoul, KR  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
38. Georgia Institute of Technology (Chemical & Biomolecular Engineering), January 18, 2012, Atlanta, GA  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"
39. Delaware Section of the American Chemical Society, February 23, 2012, Newark, DE  
**Invited Speaker** "Using Block Copolymers to Create Conducting Nanomaterials"
40. University of Connecticut (Institute of Materials Science), October 19, 2012, Storrs, CT  
**Invited Speaker** "Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers"

41. University of Maryland (Materials Science), December 7, 2012, College Park, MD  
**Invited Speaker** “Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers”
42. Massachusetts Institute of Technology [MIT] (Materials Science and Engineering), December 13, 2012, Cambridge, MA  
**Invited Speaker** “Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers”
43. Massachusetts Institute of Technology [MIT] (Martin Luther King, Jr. Luncheon Seminar), January 16, 2013, Cambridge, MA  
**Invited Speaker** “Creating functional nanoscale materials: design and synthesis of structured plastics”
44. Texas A&M University (Materials Science and Engineering), February 8, 2013, College Station, TX  
**Invited Speaker** “Using Interfacial Manipulations to Generate Functional Materials from Nanostructured Polymers”
45. Carleton College (Chemistry), February 15, 2013, Minneapolis, MN  
**Invited Speaker** “Using Block Copolymers to Create Conducting Nanomaterials”
46. Massachusetts Institute of Technology [MIT] (Martin Luther King, Jr. Institute Seminar), February 22, 2013, Cambridge, MA  
**Invited Speaker** “Materials Innovation Using Nanoscale Structured Plastics”
47. California Institute of Technology (Chemical Engineering), May 16, 2013, Pasadena, CA  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
48. Drexel University (Materials Science and Engineering), May 22, 2013, Philadelphia, PA  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
49. University of Rochester (Chemical Engineering), December 11, 2013, Rochester, NY  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
50. Ohio State University (Chemical and Biomolecular Engineering), January 23, 2014, Columbus, OH  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
51. Rice University (Chemical and Biomolecular Engineering), January 30, 2014, Houston, TX  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
52. University of Houston (Chemical and Biomolecular Engineering), January 31, 2014, Houston, TX  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
53. DuPont Company (Performance Chemicals), February 5, 2014, Wilmington, DE  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
54. Air Products and Chemicals (Global Technology Center), March 11, 2014, Allentown, PA  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
55. University of Florida (Chemistry), March 14, 2014, Gainesville, FL  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
56. National Institute of Standards and Technology (Center for High Resolution Neutron Scattering), June 13, 2014, Gaithersburg, MD  
**Invited Speaker** “Neutron Scattering: Enabling New Insights into Block Copolymer Solution Assembly and Processing”



57. University of Pennsylvania (Chemical and Biomolecular Engineering), September 24, 2014, Philadelphia, PA  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
58. Eastman Chemical, January 13, 2015, Kingsport, TN  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
59. Synthomer, May 1, 2015, Harlow, UK  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
60. University of Chicago (Molecular Engineering), October 2, 2015, Chicago, IL  
**Invited Speaker** “Modulating Ion-Doping Effects in Block Polymers via Interfacial Modifications Between Blocks”
61. Pennsylvania State University (Materials Science), October 29, 2015, State College, PA  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
62. Dow Chemical, January 19, 2016, Collegeville, PA  
**Invited Speaker** “Functional Nanoscale Systems Through Self-Assembly and Processing”
63. University of Massachusetts, Amherst (Graduate Students for Diversity in Science and Engineering), February 11, 2016, Amherst, MA  
**Invited Speaker** “When it comes to diversity, everybody needs a plan”
64. University of Massachusetts, Amherst (Polymer Science and Engineering), February 12, 2016, Amherst, MA  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
65. University of Michigan (Chemical Engineering), March 31, 2016, Ann Arbor, MI  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
66. University of Illinois (Chemical and Biomolecular Engineering), April 7, 2016, Urbana, IL  
**Invited Speaker** “Generating Functional Materials from Nanostructured Polymers”
67. Chemours, April 14, 2016, Wilmington, DE  
**Invited Speaker** “Nanostructured Polymers: Sustainable Materials, Polymeric Coatings, and Conducting Membrane Applications”
68. DuPont Company (Science and Innovation Group), September 27, 2016, Wilmington, DE  
**Invited Speaker** “Directed Self-Assembly of Block Copolymer Thin Films”
69. Northwestern University (Chemical and Biomolecular Engineering), October 6, 2016, Evanston, IL  
**Invited Speaker** - “Generating Functional Materials from Nanostructured Polymers”
70. University of Notre Dame (Chemical and Biomolecular Engineering), October 11, 2016, South Bend, IN  
**Invited Speaker** - “Generating Functional Materials from Nanostructured Polymers”  
**Thiele Lectureship**
71. Arkema, October 26, 2016, King of Prussia, PA  
**Invited Speaker** - “Functional Nanoscale Polymers: Impacting Alternative Energy, Sustainability, and Human Health through Self-Assembly”

72. University of Delaware (Chemical and Biomolecular Engineering), January 25, 2017, Newark, DE  
**Winter Research Review Keynote Speaker** - Nanostructured Block Copolymers: Impacting Sustainability and Human Health through Self-Assembly”
73. Virginia Tech (Chemical Engineering), February 1, 2017, Blacksburg, VA  
**Invited Speaker** - “Generating Functional Materials from Nanostructured Polymers”
74. Tufts University (Chemical and Biological Engineering), February 13, 2017, Medford, MA  
**Invited Speaker** - “Generating Functional Materials from Nanostructured Polymers” (postponed due to weather)
75. Solenis, March 1, 2017, Wilmington, DE  
**Invited Speaker** - “Functional Nanoscale Polymers: Sustainable Solutions through Macromolecule Design and Self-Assembly”
76. Texas A&M (Chemical Engineering), April 12, 2017, College Station, TX  
**Invited Speaker** - “Block Copolymers: Impacting Sustainability and Human Health through Self-Assembly”

**Contributed Presentations since May 2006:**

1. DOE/ NREL Minority University Research Associates (MURA) and Sustainable Energy from Solar Hydrogen NSF-IGERT Program Workshop, August 2007, Newark, DE  
*Speaker - J. Lawson* “Stabilizing Self-Assembled Block Copolymer Network Structures in Thin Films”
2. National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), March 2008, Philadelphia, PA  
*Speaker - T. Epps* “Substrate Gradient Studies of Surface Interactions in Block Copolymer Thin Films”
3. APS, March 2008, New Orleans, LA  
*Speaker - T. Epps* “Generating Surface Gradients to Control Ordering in Block Copolymer Thin Films”
4. Society of Plastics Engineers - Topical Conference, October 2008, Wilmington, DE  
*Speaker - T. Epps* “Lithium Salt Doping in PEO Containing Block Copolymers: Counterion and Concentration Effects”
5. AIChE, November 2008, Philadelphia, PA  
*Speaker - J. Lawson* “Generating Surface Energy Gradients for Block Copolymer Thin Film Studies”
6. AIChE, November 2008, Philadelphia, PA  
*Speaker - T. Epps* “Salt Doping In PEO Containing Block Copolymers: Counterion and Concentration Effects”
7. APS, March 2009, Pittsburgh, PA  
*Speaker - J. Lawson* “Generating Surface Energy Gradients for Block Copolymer Thin Film Studies”
8. APS, March 2009, Pittsburgh, PA  
*Speaker - W. Young* “Salt Doping in PEO Containing Block Copolymers: Counterion and Concentration Effects”
9. ACS, August 2009, Washington, D.C.  
*Speaker - J. Albert* “Surface Energy Gradients for Block Copolymer Thin Film Studies”
10. APS, March 2010, Portland, OR  
*Speaker - W. Young* “Interaction Parameters in Lithium Salt-Doped Block Copolymers”

11. APS, March 2010, Portland, OR  
*Speaker - J. Kelly* "Gradient Approach to Surface and Interface Effects in Block Copolymer Thin Films"
12. APS, March 2010, Portland, OR  
*Speaker - M. Tureau* "Nanoscale Networks in Etchable Triblock Copolymers"
13. American Congress on Neutron Scattering (ACNS), June 2010, Ottawa, ON, Canada  
*Speaker - T. Smart* "Cross-linked PB-PEO Hybrid Micelles for Targeted Delivery"
14. AIChE, November 2010, Salt Lake City, UT  
*Speaker - T. Epps* "Using Interfacial Manipulations to Control Ordering in Tapered Block Copolymers"
15. Smart Coatings 2011, February 2011, Orlando, FL  
*Speaker - J. Kelly* "Investigation of Stimuli Responsive Block Copolymer Thin Film Morphology Using Gradients"
16. APS, March 2011, Dallas, TX  
*Speaker - J. Albert* "Microfluidic Device for Gradient Thin Film Solvent Vapor Annealing"
17. APS, March 2011, Dallas, TX  
*Speaker - E. Kelley* "Manipulating the structural conformation of block copolymer micelles using co-solvent mixtures"
18. ACS, March 2011, Anaheim, CA  
*Speaker - E. Kelley* "Manipulating the Structural Conformation of PB-PEO Micelles Using Water-Tetrahydrofuran Co-Solvent Mixtures"
19. ACS, August 2011, Denver, CO  
*Speaker - J. Kelly* "Investigation of Thermally Responsive Block Copolymer Thin Film Morphology Using Gradient Libraries"
20. AIChE, October 2011, Minneapolis, MN  
*Speaker - T. Epps* "Using Interfacial Manipulations to Control Ordering in Tapered Block Copolymers"
21. AIChE, October 2011, Minneapolis, MN  
*Speaker - M. Sullivan* "Synthesis and Self-Assembly of Bio-Responsive Block Copolymers"
22. APS, February 2012, Boston, MA  
*Speaker - J. Seppala* "Raster solvent vapor annealing of block copolymer thin films"
23. APS, February 2012, Boston, MA  
*Speaker - W. Kuan* "Manipulating triblock copolymer morphology using tapered block interfaces"
24. APS, February 2012, Boston, MA  
*Speaker - J. Albert* "Effect of Solvent Removal Rate on the Morphology of Solvent Vapor Annealed ABA Triblock Copolymer Thin Films"
25. ACS, March 2012, San Diego, CA  
*Speaker - W. Kuan* "Interfacial modification in self-assembled triblock copolymers"
26. ACS, March 2012, San Diego, CA  
*Speaker - S. Hann* "Stabilization of non-equilibrium block copolymer micelles"
27. ACS, March 2012, San Diego, CA  
*Speaker - E. Kelley* "Synthesis and Self-Assembly of Bio-Responsive Amphiphilic Block Copolymers"

28. ACS, March 2012, San Diego, CA  
*Speaker - T. Epps* "Free and Substrate Surface Manipulations to Locally Control Nanostructures in Block Copolymer Thin Films"
29. ACS, March 2013, New Orleans, LA  
*Speaker - W. Kuan* "Interfacial Modification Effects on the Self-Assembly of Lithium-Doped Block Copolymers"
30. ACS, March 2013, New Orleans, LA  
*Speaker - C-U. Lee* "Crystallization-driven thermo-reversible gelation of coil-crystalline diblock copolypeptides"
31. ACS Green Chemistry, June 2013, Bethesda, MD  
*Speaker - A. Holmberg* "Lignin- and fatty acid-derived block copolymers for nanostructured thermoplastic elastomers"
32. AIChE, Annual Meeting, November 2013, San Francisco, CA  
*Speaker - M. Green* "Solutions Assemblies of Novel Amphiphilic Block Copolymers for Drug Delivery"
33. AIChE, Annual Meeting, November 2013, San Francisco, CA  
*Speaker - A. Foster* "Photocleavable Polyplexes As Dynamic Carriers for Controlled Nucleic Acid Delivery"
34. APS, March Meeting, March 2014, Denver, CO  
*Speaker - J. Emerson* "Phase behavior of polymer blends for organic photovoltaic applications"
35. APS, March Meeting, March 2014, Denver, CO  
*Speaker - M. Luo* "Manipulating Nanoscale Morphologies in Block Copolymer Thin Films Using Gradient Approaches"
36. ACS, Spring Meeting, March 2014, Dallas, TX  
*Speaker - K. Reno* "Tackling toxicity: Design a BPA alternative from lignin"
37. ACS Green Chemistry, June 2014, Bethesda, MD  
*Speaker - K. Reno* "Who says monomers can't grow on trees? The utilization of lignin bio-oil as a styrene alternative"
38. ACS, Fall Meeting, August 2014, San Francisco, CA  
*Speaker - A. Holmberg* "Designing Block Copolymers from Lignin Model Compounds"
39. AIChE Annual Meeting, November 2014, Atlanta, GA  
*Speaker - T. Epps* "Kinetically-controlled dynamics in block polymer micelles"
40. AIChE Annual Meeting, November 2014, Atlanta, GA  
*Speaker - T. Epps* "Controlled Self-Assembly and Ionic Conductivity Via Interfacial Modification of Lithium-Doped Block Polymers"
41. APS, March Meeting, March 2015, San Antonio, TX  
*Speaker - M. Luo* "Determination of Lithium Ion Distributions in Nanostructured Block Polymer Electrolyte Thin Films by XPS Depth Profiling"
42. APS, March Meeting, March 2015, San Antonio, TX  
*Speaker - C. Shelton* "Decoupling Substrate Surface Interactions in Block Polymer Thin Film Self-Assembly"

43. ACS, Spring Meeting, March 2015, Denver, CO  
*Speaker - C. Greco* "Photoresponsive on/off dormancy in polyplexes for patterned control of cell behavior"
44. ACS Green Chemistry, July 2015, Bethesda, MD  
*Speaker - K. Reno* "Exploration of bisguaiacols derived from lignin as potential BPA alternatives"
45. ACS Green Chemistry, July 2015, Bethesda, MD  
*Speaker - A. Holmberg* "Precision properties of polymers prepared from multicomponent lignin-based bio-oils"
46. AIChE Annual Meeting, November 2015, Salt Lake City, UT  
*Speaker - M. Sullivan* "Light-Induced Gene Silencing for Applications in Regenerative Medicine"
47. ACS Spring Meeting, March 2016, San Diego, CA  
*Speaker - M. Morris* "Synthesis and characterization of single-ion conducting polymers for lithium-ion batteries"
48. ACS Spring Meeting, March 2016, San Diego, CA  
*Speaker - V. Muir* "Optimizing gene silencing in light-responsive siRNA polyplexes by varying polymer block lengths"
49. APS March Meeting, March 2016, Baltimore, MD  
*Speaker - T. Gartner* "Development of Simulation Methods in the Gibbs Ensemble to Predict Polymer-Solvent Phase Equilibria"
50. APS March Meeting, March 2016, Baltimore, MD  
*Speaker - C. Shelton* "Tracking Solvent Distribution in Block Polymer Thin Films with *In Situ* Solvent Vapor Annealing during Neutron Scattering"
51. American Conference on Neutron Scattering (ACNS) Annual Meeting, July 2016, Long Beach, CA  
*Speaker - C. Shelton* "Tracking Solvent Distribution in Block Polymer Thin-Films with In Situ Neutron Scattering during Solvent Vapor Annealing"
52. ACS Fall Meeting, August 2016, Philadelphia, PA  
*Speaker - T. Gartner* "Utilizing Gibbs ensemble molecular dynamics and hybrid Monte Carlo/molecular dynamics simulations for efficient study of polymer-solvent phase equilibria"
53. ACS Fall Meeting, August 2016, Philadelphia, PA  
*Speaker - S. Wang* "Tunable and reversible thermo-responsiveness of sugar-based block copolymers"
54. ACS Fall Meeting, August 2016, Philadelphia, PA  
*Speaker - M. Morris* "Synthesis and characterization of single-ion conducting diblock terpolymers for lithium-ion batteries"
55. ACS Fall Meeting, August 2016, Philadelphia, PA  
*Speaker - K. Reno* "The effect of methoxy substituents on the kinetics and thermomechanical properties of photocured lignin-derived polymer networks"
56. ACS Fall Meeting, August 2016, Philadelphia, PA  
*Speaker - J. Emerson* "Effect of *ortho* and *para* constituents on the chemical and mechanical properties of lignin-based polymer films"
57. AIChE Annual Student Meeting, November 2016, San Francisco, CA  
*Speaker - V. Muir* "Efficient Tuning of siRNA Dose Response By Combining Mixed Polymer Nanocarriers with Simple Kinetic Modeling"

58. AIChE Annual Meeting, November 2016, San Francisco, CA  
*Speaker - T. Epps* "Controlling Ordering and Orientation in Nanostructured Thin Films through Combined Thermal and Solvent Annealing"
59. APS, March Meeting, March 2017, New Orleans, LA  
*Speaker - C. Shelton* "Investigating Kinetic Pathways During Solvent Vapor Annealing with Soft Shear via *In Situ* Small-Angle Neutron Scattering"
60. APS, March Meeting, March 2017, New Orleans, LA  
*Speaker - T. Gartner* "Salt Distribution, Domain Spacing, and Interfacial Characteristics in Lithium Ion-Doped Block Polymer Electrolyte Films"
61. APS, March Meeting, March 2017, New Orleans, LA  
*Speaker - M. Morris* "Single-ion conducting diblock terpolymers for lithium-ion batteries"
62. ACS Spring National Meeting, April 2017, San Francisco, CA  
*Speaker - T. Epps* "Manipulating ordering and alignment in nanostructured thin films by combining substrate and solvent annealing effects"
63. ACS Spring National Meeting, April 2017, San Francisco, CA  
*Speaker - S. Wang* "Sugar-derived thermoresponsive block copolymers"
64. ACS Spring National Meeting, April 2017, San Francisco, CA  
*Speaker - C. Greco* "Photo-responsive polymeric formulations to attenuate inflammation in cardiovascular tissues"

**Poster Presentations:**

1. GRC, Polymer Physics, June 2006, New London, CT  
*Presenter - T. Epps* "Combinatorial Studies of Block Copolymer Interactions with Surfaces"
2. GRC, Polymers-East, June 2007, South Hadley, MA  
*Presenter - T. Epps* "Gradient Approaches to the Examination of Surface Energy Effects on Block Copolymer Thin Films"
3. EPSCoR Fall Research Forum, Delaware Biotechnology Institute, November 2007, Newark, DE  
*Presenter - M. Tureau* "Active Nanostructured Capture Devices for Metabolites Using Triblock Copolymer Networks"
4. APS, March 2008, New Orleans, LA  
*Presenter - J. Lawson* "Substrate Surface Energy Gradients Using Monolayer Vapor Deposition"
5. Society of Plastics Engineers - Topical Conference, October 2008, Wilmington, DE  
*Presenter - J. Lawson* "Generating surface energy gradients for block copolymer thin film studies"
6. AIChE, November 2008, Philadelphia, PA  
*Presenter - W. Young* "Microstructure Transitions of Lithium Salt Doped PS-B-PEO Copolymer"
7. AIChE, November 2008, Philadelphia, PA  
*Presenter - N. Singh* "Synthesis and Characterization of Interfacially Modified Block Copolymers"
8. APS, March 2009, Pittsburgh, PA  
*Presenter - M. Tureau* "Network Phase Behavior of ABC Triblock Copolymer-Homopolymer Blends for Nanoporous Membranes"

9. I2CAM/FAPERJ School of Soft Matter Physics, May 2009, Rio de Janeiro, Brazil  
*Presenter - M. Tureau* "Nanoscale Networks in Etchable Triblock Copolymers"
10. GRC, Polymers, June 2009, South Hadley, MA  
*Presenter - J. Kelly* "Combinatorial Approach to Surface and Interface Effects in Thin Film Polymer Nanocomposites"
11. Department of Defense PECASE Poster Session, January 2010, Washington, D.C.  
*Presenter - T. Epps* "Ion-Conducting Network Membranes Using Tapered Block Copolymers"
12. GRC, Colloidal, Macromolecular & Polyelectrolyte Solutions, February 2010, Ventura, CA  
*Presenter - T. Epps* "Salt Doping in PEO Containing Block Copolymers: Counterion and Concentration Effects"
13. APS, March 2010, Portland, OR  
*Presenter - J. Wu* "Electrical and structural changes during phase transitions in conducting polymer cubic phases" [D. Martin graduate student]
14. GRC, Polymer Physics, June 2010, South Hadley, MA  
*Presenter - E. Kelley* "Synthesis and self-assembly of bio-responsive block copolymers"
15. GRC, Polymer Physics, June 2010, South Hadley, MA  
*Presenter - J. Kelly* "Investigation of Thermally-Responsive Block Copolymer Thin Film Morphology Using Gradients"
16. GRC, Polymer Physics, June 2010, South Hadley, MA  
*Presenter - T. Epps* "Controlling Block Copolymer Interactions Using Tapering to Stabilize Networks"
17. ACS, August 2010, Boston, MA  
*Presenter - E. Kelley* "Manipulating the structural conformation of PB-PEO micelles in water-THF co-solvent mixtures"
18. ACS, August 2010, Boston, MA  
*Presenter - T. Smart* "Cross-linked PB-PEO Hybrid Micelles for Targeted Delivery"
19. MRS, November 2010, Boston, MA  
*Presenter - R. Roy* "Design and Synthesis of Stimuli-Sensitive Micelles that Can Unveil Shielded Targeting Ligands"
20. MRS, November 2010, Boston, MA  
*Presenter - R. Roy* "Interfacially Modified Diblock and Triblock Copolymers using a Combination of Anionic Polymerization and Atom Transfer Radical Polymerization (ATRP)"
21. APS, March 2011, Dallas, TX  
*Presenter - S. Mastroianni* "Nanostructured photovoltaic materials using conjugated block copolymer assemblies"
22. APS, March 2011, Dallas, TX  
*Presenter - W. Kuan* "Synthesis and Characterization of Tapered Block Copolymers"
23. APS, March 2011, Dallas, TX  
*Presenter - W. Young* "Mixed-salts effect on the ionic conductivity of PEO-containing block copolymers"

24. GRS, Polymers East, June 2011, South Hadley, MA  
*Presenter - T. Smart* "Stabilization and functionalization of PB-PEO micelles with varying interfacial width"
25. GRC, Polymers East, June 2011, South Hadley, MA  
*Presenter - E. Kelley* "Synthesis and self-assembly of bio-responsive block copolymers"
26. GRC, Polymers East, June 2011, South Hadley, MA  
*Presenter - T. Epps* "Controlling Block Copolymer Interactions Using Tapering to Stabilize Networks"
27. GRC, Polymers East, June 2011, South Hadley, MA  
*Presenter - J. Kelly* "Investigation and Manipulation of Stimuli Responsive Block Copolymer Thin Film Morphology Using Gradient Libraries"
28. Warwick Polymers Conference 2012, July 2012, Warwick, UK  
*Presenter - E. Kelley* "Structural changes in block copolymer micelles induced by cosolvent mixtures"
29. Warwick Polymers Conference 2012, July 2012, Warwick, UK  
*Presenter - S. Mastroianni* "Synthesis and self-assembly of poly(methyl methacrylate-b-m-triphenylamine) block copolymers"  
**\*Polymer Chemistry Poster Prize Winner\***
30. GRC, Macromolecular Materials 2013, January 2013, Ventura, CA  
*Presenter - M. Green* "Solution assemblies of block copolymers for nucleic acid and drug delivery"
31. GRC, Polymers East 2013, June 2013, South Hadley, MA  
*Presenter - E. Kelley* "Bio-responsive Block Copolymer for Targeted Drug Delivery"
32. GRC, Polymers East 2013, June 2013, South Hadley, MA  
*Presenter - T. Epps* "Using Tapered Block Copolymers to Create Conducting Nanomaterials"
33. ACS Green Chemistry Conference, June 2013, Bethesda, MD  
*Presenter - K. Reno* "Getting a Handle on Vanillin: Green Modifications"
34. ACS Green Chemistry Conference, June 2013, Bethesda, MD  
*Presenter - A. Holmberg* "Lignin- and fatty acid-derived monomers for nanostructured thermoplastic elastomers"
35. ACS Green Chemistry Conference, June 2014, Bethesda, MD  
*Presenter - A. Holmberg* "The Design and Synthesis of Sustainable Nanostructured Block Polymers"
36. ACS, Fall Meeting, August 2014, San Francisco, CA  
*Presenter - A. Holmberg* "Nanoscale self-assembly and morphology-dependent repellency of omniphobic triblock terpolymers"
37. Society of Rheology, October 2014, Philadelphia, PA  
*Presenter - J. Emerson* "Effect of material rheology on polymer blend thin film morphology"
38. NIST Sigma Xi Poster Session, January 2015, Gaithersburg, MD  
*Presenter - C. Shelton* "Predicting Substrate and Solvent Interaction Effects in Block Polymer Thin Films"
39. APS, March Meeting, March 2015, San Antonio, TX  
*Presenter - C. Shelton* "Tracking Solvent Uptake in Block Polymer Thin Films during Solvent Vapor Annealing"



40. APS, March Meeting, March 2015, San Antonio, TX  
*Presenter - M. Luo* "Macroscopic Alignment of Cylindrical Block Polymer Thin Film via Raster Solvent Vapor Annealing with Soft Shear"
41. GRC, Polymers East 2015, June 2015, South Hadley, MA  
*Presenter - T. Epps* "Tapered block polymers: Controlling segment sequence to improve materials properties"
42. GRC, Polymers East 2015, June 2015, South Hadley, MA  
*Presenter - A. Holmberg* "RAFT Polymerization of Complex Mixtures in Pursuit of Sustainable Polymers from Bio-Oils"
43. Functional Polymeric Materials Conference, August 2015, Ascot, UK  
*Presenter - T. Epps* "Nanostructured Polymers for Improving Sustainability, Human Health, and the Environment"
44. AIChE, November 2015, Salt Lake City, UT  
*Presenter - D. Scott* "Macroscopic Alignment of Cylindrical Block Polymer Thin Films *via* Raster Solvent Vapor Annealing with Soft Shear"  
**\*MESD Poster Prize Winner – Overall First Place\***
45. GRC, Polymers Physics 2016, July 2016, South Hadley, MA  
*Presenter - T. Epps* "Manipulating nanostructured thin films by combining substrate modifications and solvent annealing"
46. AIChE Annual Student Meeting, November 2016, San Francisco, CA  
*Presenter - J. Saltwick* "Combining Solvent Swelling and Shear Alignment to Direct Block Polymer Thin Film Self-Assembly"
47. APS, March Meeting, March 2017, New Orleans, LA  
*Presenter - C. Shelton* "Quantifying lithium salt distributions in nanostructured ion-conducting polymer domains: a neutron reflectivity"
48. APS, March Meeting, March 2017, New Orleans, LA  
*Presenter - T. Gartner* "Gibbs Ensemble Simulations of the Solvent Swelling of Polymer Films"
49. APS, March Meeting, March 2017, New Orleans, LA  
*Presenter - M. Morris* "Elucidating the effects of blending and salt-doping in A-B/A polymer blends for lithium-ion battery electrolytes"
50. ACS Spring National Meeting, April 2017, San Francisco, CA  
*Presenter - S. Wang* "Effect of methoxy substituent position on thermal properties and solvent resistance of lignin-inspired poly(dimethoxy phenyl methacrylate)"

**Short Courses and Workshops Organized:**

Organizer: NSF Sponsored Future Faculty Workshop "Grooming Diverse Faculty for the Future"; August 14-16, 2016, Newark, DE

**Short Courses and Workshops Taught/Paneled:**

"High-throughput approaches to Polymer Physics and Materials Science" DPOLY Short Course, American Physical Society (APS) Annual Meeting, March 8-9, 2008, New Orleans, LA. Course Organizer: Michael J. Fasolka (NIST)

“The Job Application Process, The Job Interview, and Idea Development” Future Faculty Workshop: Diverse Leaders of Tomorrow, June 19-21, 2011, Cambridge, MA. Course Organizer: Timothy Swager (MIT)

“Controlled Generation of Functional Materials from Nanostructured Polymers” Future Faculty Workshop: Diverse Leaders of Tomorrow, June 19-21, 2011, Cambridge, MA. Course Organizer: Timothy Swager (MIT)

“The Job Application Process, The Job Interview, and Idea Development” Future Faculty Workshop: Diverse Leaders of Tomorrow, July 15-27, 2012, Santa Barbara, CA. Course Organizer: Craig Hawker (UC Santa Barbara)

“The Job Application Process, The Job Interview, and Idea Development” Future Faculty Workshop: Diverse Leaders of Tomorrow, July 20-22, 2014, Cambridge, MA. Course Organizer: Timothy Swager (MIT)

“The Job Application Process, The Job Interview, and Idea Development” Future Faculty Workshop: Diverse Leaders of Tomorrow, August 14-16, 2016, Newark, DE. Course Organizer: Thomas Epps (UD)

“Time Management” Future Faculty Workshop: Diverse Leaders of Tomorrow, August 14-16, 2016, Newark, DE. Course Organizer: Thomas Epps (UD)

‘Hierarchical Self-Assembly’ Working Group, Frontiers in Polymer Science and Engineering National Science Foundation Workshop, August 17-18, 2016, Arlington, VA. Organizer: Frank Bates (U. of Minnesota)

### **Researchers Supervised:**

#### **Ph.D. Students (current Ph.D. students in bold)**

1. Julie Albert (nee Lawson) - Exploration of Block Copolymer Thin Film Self-Assembly using Gradient Methods - 08/22/2011 \*faculty at Tulane University\*
2. Maëva Tureau - Nanostructured Copolymer Capture Devices for Environmental Metabolomics - 10/28/2011 \*Air Products\*
3. Wen-Shiue Young - Ion-conductivity in Block Copolymer Electrolyte Membranes - 04/03/2012 \*Dow Chemical\*
4. Elizabeth Kelley (co-advised with Sullivan) - Bio-responsive Polymeric Vesicles for Targeted Drug Delivery - 04/15/2014 \*NIST Center for Neutron Research, NRC Fellow\*
5. Sarah Mastroianni - Nanostructured Photovoltaic Materials using Conjugated Block Copolymer Assemblies - 06/10/2014 \*Dow Chemical\*
6. Wei-Fan Kuan - Nanoporous Network Templates for Alternative Energy (Lithium Battery and Fuel Cell Membrane) Applications - 05/21/2015
7. Angela Holmberg - Bottom-up Design and Synthesis of Sustainable Block Polymers - 12/04/2015
8. Michael Mayeda (co-advised with Lauterbach) - Templating Inorganic Materials with Block Polymer Thin Films and Catalyzing Military Jet Fuel to Liquefied Petroleum Gas - 04/18/2016
9. Ming Luo - Controlling Self-Assembly and Ordering of Block Polymer Nanostructures in Thin Films - 06/02/2016
10. Jillian Emerson (co-advised with Furst) - Polymer mixture thermodynamics in solution and applications for functional, microstructured films - 12/14/2016
11. **Cameron Shelton - Small-Angle Neutron Scattering Methods for Examining Block Copolymer Thin Film Nanostructures – 05/2017 (expected)**
12. **Chad Greco (co-advised with Sullivan) - Photo-Responsive Block Copolymers Assemblies for Controlled Nucleic Acid Delivery – 05/2017 (expected)**
13. **Kaleigh Reno - Nanostructured Elastomers from Bio-based Block Copolymers - 01/2018 (expected)**
14. **Melody Morris - Tapered Block Copolymers for Lithium Battery Applications - 01/2018 (expected)**

15. Rashida Ruddock (co-advised with Sullivan) - Stimuli-Responsive Nanocarriers for Targeted Theranostics - 01/2019 (expected)
16. Thomas Gartner (co-advised with Jayaraman) - Influence of Solution Processing on Thin Film Behavior of Polymer Blends and Block Polymers - 01/2019 (expected)
17. Greg Peterson - Electrospinning of Polymer-Containing Metal Organic Frameworks - 01/2021 (expected)
18. Priyanka Ketkar - Block Polymers for Lithium Battery Applications - 01/2021 (expected)
19. Soodabeh Sharafi - Shear-Alignment of Block Copolymers Nanostructures via Solvent Processing - 01/2021 (expected)

**M.S. Students (thesis-based) (current students in bold):**

1. Ryan Murphy (co-advised with Sullivan) - Solution Assembly of Amphiphilic Block Copolymers for Targeted Drug Delivery - 08/2014
2. **Emma De Baets** (co-advised with Sullivan) – Effect of Air/Water Interfaces on Block Copolymer Micelle Stability - Expected (05/2017) - *joint Masters program with Leuven, Belgium*
3. **Laurens Heusele** (co-advised with Sullivan) – Mixing of Polymeric for Controlled Formulation of Payload Delivery Systems - Expected (05/2017) - *joint Masters program with Leuven, Belgium*

**Postdoctoral Researchers (current postdocs in bold):**

1. Nripen Singh - Interfacial Modifications in Melt-State Block Copolymers (2008-2009) \*now at Boston Scientific\*
2. Jong Keun Park - Synthesis and Characterization of Tapered Triblock Copolymers (2010) \*now at Dow Chemical\*
3. Jennifer Kelly - (co-advised with Fasolka, NIST) Combinatorial Studies of Thermally-Responsive Block Copolymer Thin Films (2008-2011) \*now at FDA\*
4. Vijay Taori - (co-advised with Sullivan) Peptide-Containing Block Copolymer Amphiphiles for Targeted Drug Delivery (2010-2011)
5. Thomas Smart - (co-advised with Sullivan) Neutron Scattering of Solution Assembly in Amphiphilic Block Copolymer Systems (2010-2012) \*now at Eastman Chemical\*
6. Raghunath Roy - (co-advised with Sullivan) Peptide-Containing Block Copolymer Amphiphiles for Targeted Drug Delivery (2009-2012) \*now at Dow Chemical\*
7. JungHyun Lee - (co-advised with Stafford, NIST) Mechanical Properties of Polymeric Thin Films (2010-2012) \*now at Korea Institute of Science and Technology, Faculty\*
8. Jon Seppala - Thin Film Assembly of Surface-Responsive Block Copolymers (2010-2012) \*now at NIST, NCNR\*
9. Sung Hyun Han - Novel Block Copolymers for Ion-Conducting Applications (2012-2013)
10. Matthew Green - (co-advised with Sullivan) Peptide-Containing Block Copolymer Amphiphiles for Targeted Drug Delivery (2012-2014) \*now at Arizona State University, Assistant Professor in Chemical Engineering\*
11. Tiffany Suekama - Shape-Changing Multi-responsive Nanoparticles in Solution (2015-2016)
12. **Shu Wang** - **Bio-based Block Copolymers for Thermoplastics and Drug Delivery Applications (2015-present)**
13. **Thu Vi** - **Design of Responsive Polymeric Nanocarriers for Gene Therapy Applications (2017-present)**

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

1. Paul Brigandi - Effects of Lithium Counterions on the Assembly of Microphase-Separated Copolymer Electrolytes – 2006-2008 \*now at The Dow Chemical Co. Wire and Cable\*
2. Thomas Scherr - Solvent Vapor Annealing of Block Copolymer Thin Films – 2006-2008 \*now graduate student in chemical engineering at LSU\*
3. Peter Wells - Solvent Quality Effects on the Solution Assembly of Amphiphilic Diblock Copolymers – 2007-2008

4. Michael Baney - Templating Proteins Using Self-Assembled Block Copolymer Thin Films – 2008-2010 \*now at Hexcel\*
5. Khrishna Mukkavilli - Influence of Substrate Modifications on the Assembly of Network-Forming Block Copolymer Thin Films – (B.S. 2009 Arizona State University, expected) NSF REU for Summer 2008 \*deceased\*
6. Timothy Bogart - Ordering of Cylindrical Block Copolymer Thin Films – 2008-2010 \*now graduate student in chemical engineering at UT Austin\*
7. Jason Papandrea - Surface Modifications in Thin Film Block Copolymers – Summer 2009
8. Jasmine Smith - Mechanical Measurements in Oriented Block Copolymer Films – (B.S. 2011 Delaware State University, expected) NSF REU for Summer 2009
9. Thomas Ronan - Incorporating Nanoparticles in Block Copolymer Thin Films – (B.S. 2010 University of Notre Dame) NSF REU for Summer 2009 \*now at Deloitte\*
10. Joey Kim - Vapor Deposition of Chlorosilane Gradient Monolayers for Polymer Thin Film Studies – 2010-2012 \*now graduate student in chemical engineering at Caltech\*
11. Robert Pagels - Solution Self-Assembly of Amphiphilic Polymer/Peptide Hybrid Materials – 2010-2012 \*now graduate student in chemical engineering at Princeton\*
12. Allen (Benjamin) Schantz - Lithium Ion-Conductivity in Poly(ethylene oxide) - Containing Block Copolymers – Summer 2010 \*now graduate student in chemical engineering at Penn State\*
13. Ronald Lewis - Solvent Vapor Annealing to Manipulate Block Copolymer Thin Films – 2010-2013
14. Ryan Murphy - Organic Photovoltaics from Block Copolymers – (B.S. 2011 University of Kansas) NSF REU for Summer 2010 \*now graduate student in chemical engineering at UD\*
15. Sarah Hann - Stability of Block Copolymer Micelles in Solvent/PEO Solutions – 2010-2012 \*now graduate student in chemical engineering at Penn\*
16. Eddie Qian - Organic Photovoltaics from Block Copolymers – 2010-2011
17. Eddie Sangern - Polymer Solvent Interaction Parameters Using Thin Film Swelling – 2011-2012
18. Ellen Reed - Lithium-ion Conductivity in Block Copolymer Membranes – 2011-2014 \*now graduate student in chemical engineering at UPenn\*
19. Matthew Hoffman - Nanoscale Structures from Block Copolymer Blending – 2011-2012
20. Kevin Hutter - Chlorosilane Gradients for Droplet Wettability Studies – 2011-2013
21. Michael Karavolias - Bio-based Monomers from Lignin Feedstocks – 2013-2016
22. Connor Hodges - Polymer/Peptide Hybrid Materials for Targeted Drug Delivery – (B.S. expected 2015 Carleton College) REU for Summer 2013
23. Douglas Scott - Thin Film Self-Assembly of Tapered Block Copolymers – 2013-2016
24. John McCarron - Thin Film Properties of Environmentally-Responsible Block Polymers – 2013-2016
25. **Victoria Muir - Solution Assembly of Nucleic Acid-Complexing Block Polymers – 2014-present**
26. Dakota Hanemann-Rawlings - Lignin Feedstocks for Bio-based Resins – 2014-2016
27. **Jason Andrechak - Formulation of Nucleic Acid-Containing Micelles for Gene Therapy Applications – 2014-present**
28. Bonnie Limpawuchara - Block Polymer Electrolytes for Battery Membranes – Summer 2015
29. **John Saltwick - Thin Film Assembly of Block Polymers – 2015-present**
30. **George Weiber - Properties of Lignin-Based Polymers – 2016-present**
31. Spencer Burton - New Monomers and Polymers from Lignin-based Feedstocks – (B.S. expected 2018 Case Western Reserve University) REU for Summer 2016
32. **Sophia Freaney - Shear-Alignment of Block Copolymer Thin Films – 2017-present**
33. **James Mannino - Metal Organic Frameworks for Sensing Applications – 2017-present**
34. **Maura Swift - New Biobased Polymers for Thermoplastics Applications – 2017-present**

#### **Student Awards (Epps group):**

1. Julie Albert - NSF Graduate Fellowship (2008-2011)
2. Owen Young - 2<sup>nd</sup> year Chemical Engineering Best Graduate Student Award (2009)
3. Maëva Tureau - Air Products Graduate Fellowship (2009-2010)
4. Jennifer Kelly - NRC Postdoctoral Fellowship at NIST (2010)
5. Chisom Amaechi - NSF Graduate Fellowship Honorable Mention (2010)
6. Elizabeth Kelly - NSF Graduate Fellowship Honorable Mention (2010)
7. Timothy Bogart - NSF Graduate Fellowship Honorable Mention (2010)
8. Julie Albert - Akzo Nobel Graduate Student Award Finalist (ACS Fall Meeting) (2010)

9. Thomas Smart - NIST Scattering School Participant (2010)
10. Elizabeth Kelley - National Scattering School Participant (2010)
11. Angela Holmberg - Pigford Fellowship (2010-2011)
12. Elizabeth Kelley - NDSEG Graduate Fellowship (2010-2013)
13. Julie Albert - Padden Award Finalist (APS March Meeting) (2011)
14. Elizabeth Kelley - Gordon Research Conference (Polymers) Journal of Materials Chemistry Poster Award (2011)
15. Sarah Hann - AFCEA General John A. Wickham Scholarship (2011-2012)
16. Sarah Hann - ACS POLY Undergraduate Travel Award (2012)
17. Elizabeth Kelley - ACS POLY/PMSE Excellence in Graduate Research Award (2012)
18. Joey Kim - NSF Graduate Fellowship (2012)
19. Robert Pagels - NSF Graduate Fellowship (2012)
20. Robert Pagels - Alexander Taylor Outstanding Senior Male at UD Award (2012)
21. Michael Mayeda - Ford Foundation Doctoral Fellowship Honorable Mention (2012)
22. Sarah Mastroianni - Warwick 2012 MacroUK Polymer Conference, Polymer Chemistry Poster Prize (2012)
23. Wei-Fan Kuan - ACS POLY Graduate Student Travel Award (2013)
24. Elizabeth Kelley - 63<sup>rd</sup> Lindau Nobel Laureate Young Researcher Award (2013)
25. Kaleigh Reno - NSF Graduate Student Travel Fellowship to ACS Green Chemistry Conference (2013)
26. Angela Holmberg - NSF Graduate Student Travel Fellowship to ACS Green Chemistry Conference (2013)
27. Kaleigh Reno - ACS Green Chemistry Conference Poster Prize - First Place (2013)
28. Angela Holmberg - NSF CIBA Green Chemistry Graduate Student Travel Award (2013)
29. Elizabeth Kelley - CCR (Council for Chemical Research) Graduate Student Award (2014)
30. Elizabeth Kelley - NRC Postdoctoral Fellowship (2014)
31. Angela Holmberg - University of Delaware Professional Development Award (2014)
32. Cameron Shelton - University of Delaware Professional Development Award (2015)
33. Ming Luo - University of Delaware Professional Development Award (2015)
34. Thomas Gartner - NSF Graduate Fellowship Honorable Mention (2015)
35. Kaleigh Reno - 65<sup>th</sup> Lindau Nobel Laureate Young Researcher Award (2015)
36. Thomas Gartner - Paul H. Schipper Fellowship (2015)
37. Angela Holmberg - AIChE Graduate Student Award Finalist (2015)
38. Angela Holmberg - University of Delaware Dissertation Fellowship (2015)
39. Douglas Scott - AIChE MESD Poster Session, Overall First Prize (2015)
40. Melody Morris - University of Delaware Professional Development Award (2016)
41. Victoria Muir - ACS POLY Undergraduate Best Oral Presentation – 2<sup>nd</sup> Place (2016)
42. Victoria Muir - Goldwater Scholar (2016)
43. Melody Morris - Robert L. Pigford Teaching Assistant Award, Chemical Engineering (2016)
44. Chad Greco - Saurabh A. Palkar Graduate Award for Mentoring, College of Engineering (2016)
45. Chad Greco - University of Delaware Professional Development Award (2016)
46. Cameron Shelton - Padden Award Finalist, American Physical Society (2017)
47. Chad Greco - ACS Excellence in Graduate Polymer Research Symposium (2017)

#### **Thesis Committees of University of Delaware Students (Graduate)**

I have served (or am serving) on the following graduate thesis committees at the University of Delaware. The primary advisor and department are given in parentheses.

1. Jennifer O'Donnell, Ph.D. 2007 (Eric Kaler, Chemical Engineering)
2. Kelly Hales, Ph.D. 2007 (Darrin Pochan, Materials Science)
3. Travis Larsen, Ph.D. 2008 (Eric Furst, Chemical Engineering)
4. Mingjiang Zhang, Ph.D. 2010 (Richard Wool, Chemical Engineering)
5. JeongJae Wie, Ph.D. 2012 (Norman Wagner and Michael Mackay, Chemical Engineering)
6. Jiahua Zu, Ph.D. 2012 (Darrin Pochan, Materials Engineering)
7. Joseph Stanzione, Ph.D. 2013 (Richard Wool, Chemical Engineering)
8. Longxi Xiao, Ph.D. 2013 (Xinqiao Jia, Materials Science)

9. Qian Gou, Ph.D. 2014 (Babatunde Ogunnaike, Chemical Engineering)
10. Bingzi Zhang, Ph.D. 2015 (Yushan Yan, Chemical Engineering)
11. Yingchao Chen, Ph.D. 2015 (Darrin Pochan, Materials Science)
12. Hao Shen, Ph.D. 2015 (Michael Mackay, Chemical Engineering)
13. Sheng Zhong, Ph.D. 2016 expected (Darrin Pochan, Materials Science)
14. Hang Lau, Ph.D. 2017 expected (Kristi Kiick, Materials Science)
15. Ru Chen, Ph.D. 2018 expected (Norman Wagner, Chemical Engineering)
16. Hao Wang, Ph.D. 2019 expected (Yushan Yan, Chemical Engineering)
17. Diana Haidar, Ph.D. 2019 expected (David Burris, Mechanical Engineering)
18. Bryan Sutherland, Ph.D. 2019 expected (Christopher Kloxin, Materials Science)
19. Joshua Condon, Ph.D. 2020 expected (Arthi Jayaraman, Chemical Engineering)

### **Teaching Experience and Qualifications:**

The numbers in brackets indicate the enrollment. The number listed after each secondary bullet represents the average student responses to the online course evaluation questions (5-Strongly Agree; 3-Neutral; 1-Strongly Disagree).

### **Courses Instructed**

- CHEG 600 [25] Introduction to Polymer Science (2/3 load), Fall 2006 (elective)
  - Instructor Prepared - 4.4
  - Instructor Knowledgeable - 4.5
  - Instructor Communicates Well - 4.1
  - Instructor Stimulates Interest - 4.0
- CHEG 345 [44] Chemical Engineering Lab I; Heat-Exchanger Module, Spring 2007 (core)
  - Instructor Prepared - 3.5
  - Instructor Knowledgeable - 3.6
  - Instructor Communicates Well - 3.4
  - Instructor Stimulates Interest - 3.4
- CHEG 600 [24] Introduction to Polymer Science, Fall 2007 (elective)
  - Instructor Prepared - 4.6
  - Instructor Knowledgeable - 4.8
  - Instructor Communicates Well - 4.3
  - Instructor Stimulates Interest - 4.4
- CHEG 325 [42] Chemical Engineering Thermodynamics II (w/Lenhoff), Spring 2008 (core)
  - Instructor Prepared - 4.5
  - Instructor Knowledgeable - 4.4
  - Instructor Communicates Well - 3.6
  - Instructor Stimulates Interest - 3.5
- CHEG 600/MSEG 630 [39] Introduction to Polymer Science, Fall 2008 (core)
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 4.7
  - Instructor Communicates Well - 4.2
  - Instructor Stimulates Interest - 3.9
- CHEG 867 [18] Scattering Methods in Soft Materials (w/Wagner), Fall 2008 (elective)
- CHEG 325 [60] Chemical Engineering Thermodynamics II, Spring 2009 (core)
  - Instructor Prepared - 4.5
  - Instructor Knowledgeable - 4.5
  - Instructor Communicates Well - 4.1
  - Instructor Stimulates Interest - 3.5

- CHEG 867 [8] Assembly of Soft Materials, Fall 2009 (elective)
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 5.0
  - Instructor Communicates Well - 4.3
  - Instructor Stimulates Interest - 4.8
- CHEG 325 [78] Chemical Engineering Thermodynamics II, Spring 2010 (core)
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 4.8
  - Instructor Communicates Well - 4.1
  - Instructor Stimulates Interest - 3.6
- CHEG 325 [78] Chemical Engineering Thermodynamics II, Spring 2011 (core)
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 4.8
  - Instructor Communicates Well - 4.2
  - Instructor Stimulates Interest - 3.7
- CHEG 600/MSEG 630 [25] Introduction to Polymer Science, Fall 2011
  - Instructor Prepared - 4.8
  - Instructor Knowledgeable - 4.9
  - Instructor Communicates Well - 4.7
  - Instructor Stimulates Interest - 4.5
  - Instructor One of Best Teachers - 4.4
- CHEG 325 [89] Chemical Engineering Thermodynamics II (w/Buttrey), Spring 2012 (core)
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 4.8
  - Instructor Communicates Well - 4.5
  - Instructor Stimulates Interest - 4.3
  - Instructor One of Best Teachers - 4.1
- CHEG 600/MSEG 630 [36] Introduction to Polymer Science, Fall 2013
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 4.9
  - Instructor Communicates Well - 4.4
  - Instructor Stimulates Interest - 4.4
  - Instructor One of Best Teachers - 4.1
- CHEG 867 [6] Assembly of Soft Materials, Fall 2014 (elective)
  - Instructor Prepared - 4.3
  - Instructor Knowledgeable - 4.3
  - Instructor Communicates Well - 4.5
  - Instructor Stimulates Interest - 4.3
  - Instructor One of Best Teachers - 4.0
- CHEG 231 [103] Chemical Engineering Thermodynamics I (w/Jiao), Fall 2014 (core)
  - Instructor Prepared - 4.5
  - Instructor Knowledgeable - 4.7
  - Instructor Communicates Well - 3.4
  - Instructor Stimulates Interest - 3.5
- CHEG 325 [85] Chemical Engineering Thermodynamics II (w/Furst), Spring 2015 (core)
  - Instructor Prepared - 4.7
  - Instructor Knowledgeable - 4.9
  - Instructor Communicates Well - 4.2
  - Instructor Stimulates Interest - 4.3
  - Instructor One of Best Teachers - 4.0
- CHEG 231 [115] Chemical Engineering Thermodynamics I (w/Enszer), Fall 2015 (core)
  - Instructor Prepared - 4.6
  - Instructor Knowledgeable - 4.9
  - Instructor Communicates Well - 4.2
  - Instructor Stimulates Interest - 4.0
  - Instructor One of Best Teachers - 3.9

- CHEG 867 [TBD] Assembly of Soft Materials, Spring 2017 (elective)

\* Initiated the recombination of CHEG 600 and MSEG 630 starting in Fall 2008. The re-creation of CHEG/MSEG 630 allowed for the offering of a new elective in both the CHEG and MSEG departments.

\* MSEG 630 was a core graduate course in the Materials Science and Engineering Department in 2009.

### **Professional Service:**

#### **Membership in Professional Societies**

- American Institute of Chemical Engineers (AIChE)
  - Minority Affairs Committee - Minority Faculty Forum
  - Minority Faculty Forum - Development Subcommittee
- American Chemical Society (ACS), ACS-POLY, ACS-PMSE, ACS-I&EC
  - ACS Expert [www.acs.org/experts] (2017-present)
  - ACS Development Advisory Board (2014-present)
  - ACS Scholars Program, Program Advisor (2013-2016)
  - ACS Diversity and Inclusion Advisory Board (2011-2013)
  - ACS Board of Directors Diversity Partner (2009-2010)
  - ACS Minority Scholars Program Subcommittee Invited Member (2008)
- American Physical Society (APS), DPOLY
- National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE)
- Sigma Xi
- Neutron Scattering Society of America (NSSA)
- Royal Society of Chemistry (RSC)

#### **Conference/Program/Workshop Chair:**

1. Program Chair - American Physical Society Polymers Division (APS DPOLY), 2015 APS Meeting, March 2-6, 2015, San Antonio, TX.
2. Workshop Chair - National Science Foundation, Future Faculty Workshop, August 14-16, Newark, DE.
3. Program Co-Chair - 3<sup>rd</sup> Functional Polymeric Materials Conference (Fusion Conferences), July 7-10, 2017, Rome, Italy.
4. Program Co-Chair - American Chemical Society POLY Division, 2017 ACS Spring Meeting, April 2-6, 2017, San Francisco, CA.
5. Program Co-Chair - American Chemical Society POLY Division, 2017 ACS Fall Meeting, August 20-24, 2017, Washington, D.C.
6. Program Chair - American Chemical Society POLY Division, 2018 ACS Spring Meeting, March 18-22, 2018, New Orleans, LA.

#### **Conference/Program Organization:**

1. APS DPOLY Program Abstract and Session Sorter, 2005 APS March National Meeting, Los Angeles, CA.
2. APS DPOLY Program Abstract and Session Sorter, 2006 APS March National Meeting, Baltimore, MD.
3. APS DPOLY Program Abstract and Session Sorter, 2007 APS March National Meeting, Denver, CO.
4. APS DPOLY Program Abstract and Session Sorter, 2008 APS March National Meeting, New Orleans, LA.
5. APS DPOLY Program Abstract and Session Sorter, 2009 APS March National Meeting, Pittsburgh, PA.
6. APS DPOLY Focus Session "Long Range Order in Polymeric Structure and Morphology", 2010 APS March Meeting, Portland, OR.
7. APS DPOLY Program Abstract and Session Sorter, 2011 APS March National Meeting, Dallas, TX.
8. APS DPOLY Focus Session "Thin Film Block Copolymers", 2011 APS March Meeting, Dallas, TX.



9. 44th IUPAC World Polymer Congress Program International Advisory Committee, 2012 Meeting, Blacksburg, VA.
10. APS DPOLY Program Abstract and Session Sorter, 2012 APS March National Meeting, Boston, MA.
11. APS DPOLY Focus Session "Thin Film Block Copolymers", 2012 APS March Meeting, Boston, MA.
12. AIChE MESD "Emerging Areas in Polymer Science and Engineering" Symposium, 2012 AIChE Annual Meeting, Pittsburgh, PA.
13. APS DPOLY Focus Session "Block Copolymer Solution Assemblies", 2014 APS March Meeting, Denver, CO.
14. APS DPOLY Program Abstract and Session Sorter, 2014 APS March National Meeting, Denver, CO.
15. APS DPOLY Invited Session "Interfacing Experiment and Theory in Polymer Physics", 2015 APS March Meeting, San Antonio, TX.
16. APS DPOLY Invited Session "Ion-Containing Polymers", 2015 APS March Meeting, San Antonio, TX.
17. APS DPOLY Invited Session "Physics of Biomacromolecules", 2015 APS March Meeting, San Antonio, TX.
18. APS DPOLY Program Abstract and Session Sorter, 2017 APS March National Meeting, New Orleans, LA.

**Chaired or Co-chaired Conference Sessions:**

1. Chair, "Block Copolymers II" (DPOLY) APS National Meeting, March 21-25, 2005, Los Angeles, CA.
2. Co-Chair, "Combinatorial Approaches to Materials – Biopolymers" ACS Fall National Meeting, August 28-September 1, 2005, Washington, D.C.
3. Session Leader, "Surface Energy Gradients on Substrates" National Educators Workshop, October 2005, Gaithersburg, MD.
4. Chair, "Block Copolymer Phase Behavior" (DPOLY) APS National Meeting, March 13-17, 2006, Baltimore, MD.
5. Chair, "Nanostructured Block Copolymer Thin Films" (DPOLY) APS National Meeting, March 13-17, 2006, Baltimore, MD.
6. Chair, "Polymer Thin Films and Interfaces III" (Area 8a), AIChE Annual Meeting, November 12-17, 2006, San Francisco, CA.
7. Chair, "Block Copolymer Thin Films" (DPOLY) APS National Meeting, March 5-9, 2007, Denver, CO.
8. Co-Chair, "Nanoscale Structure in Polymers I: Self-Organization of Polymers at Surfaces and Interfaces" (Area 8a), AIChE Annual Meeting, November 4-9, 2007, Salt Lake City, UT.
9. Co-Chair/Organizer, Materials Science Poster Session, APS National Meeting March 9-14, 2008, New Orleans, LA.
10. Chair, "Properties of Block Copolymers", (DPOLY) APS National Meeting March 9-14, 2008, New Orleans, LA.
11. Chair, "Materials/Polymers Chemistry", NOBCCHE Annual Meeting, March 16-21, 2008, Philadelphia, PA.
12. Co-Chair, "Nanoscale Structure in Polymers II: Self-Organization of Polymers at Surfaces and Interfaces" (Area 22), AIChE Annual Meeting, November 16-21, 2008, Philadelphia, PA.
13. Co-Chair, "Nanoscale Structure in Polymers I: Self-Organization of Polymers at Surfaces and Interfaces" (Area 22), AIChE Annual Meeting, November 16-21, 2008, Philadelphia, PA.
14. Co-Chair, Materials Science Poster Session (Area 8), AIChE Annual Meeting, November 16-21, 2008, Philadelphia, PA.
15. Chair, "Nanoscale Structure in Polymers I" (Area 8a), AIChE Annual Meeting, November 16-21, 2008, Philadelphia, PA.
16. Chair, "Bulk Block Copolymers I", (DPOLY) APS National Meeting, March 16-20, 2009, Pittsburgh, PA.
17. Chair, "Nanomaterials", NOBCCHE Northeast Regional Meeting, October 24, 2009, Cambridge, MA.
18. Chair, "Nanoscale Structure in Polymers I" (Area 8a), AIChE Annual Meeting, November 8-13, 2009, Nashville, TN.
19. Chair, Materials Science Poster Session (Area 8), AIChE Annual Meeting, November 8-13, 2009, Nashville, TN.
20. Discussion Leader, "Ions in Polymers", Gordon Research Conference - Colloidal, Macromolecular & Polyelectrolyte Solutions, February 21-26, Ventura, CA.

21. Co-chair, "Long Range Order in Polymeric Structure and Morphology I", (DPOLY) APS National Meeting, March 15-19, 2010, Portland, OR.
22. Chair, "Long Range Order in Polymeric Structure and Morphology II", (DPOLY) APS National Meeting, March 15-19, 2010, Portland, OR.
23. Chair, "Nanoscale Structure in Polymers I" (Area 8a), AIChE Annual Meeting, November 7-12, 2010, Salt Lake City, UT.
24. Chair, "Thin Film Block Copolymers I", (DPOLY) APS National Meeting, March 21-25, 2011, Dallas, TX.
25. Co-chair, "Thin Film Block Copolymers II", (DPOLY) APS National Meeting, March 21-25, 2011, Dallas, TX.
26. Co-chair, "Thin Film Block Copolymers III", (DPOLY) APS National Meeting, March 21-25, 2011, Dallas, TX.
27. Chair, "Fundamental Topics in the Physics and Theory of Novel Polymeric Systems", (PMSE) ACS Spring National Meeting, March 27-31, 2011, Anaheim, CA.
28. Chair, "Polymer Thin Films and Interfaces I" (Area 8a), AIChE Annual Meeting, October 16-21, 2011, Minneapolis, MN.
29. Co-chair, "Polymer Thin Films and Interfaces I" (Area 8a), AIChE Annual Meeting, October 16-21, 2011, Minneapolis, MN.
30. Chair "Thin Film Block Copolymers I", 2012 APS March Meeting, February 27-March 2, Boston, MA.
31. Chair "Polymer Gels and Self Assembly", 2012 IUPAC World Polymer Congress, June 24-29, 2012, Blacksburg, VA.
32. Chair "Colloids", Warwick 2012 Polymer Conference, July 9-12, 2012, Coventry, UK.
33. Chair, "Emerging Areas in Polymer Science and Engineering" (Area 8a), AIChE Annual Meeting, October 28-November 2, 2012, Pittsburgh, PA.
34. Chair, "New Concepts in Polymeric Materials" (PMSE), ACS Spring National Meeting, April 7-April 11, 2013, New Orleans, LA.
35. Chair "Block Copolymer Solution Assemblies I", 2014 APS March Meeting, March 3-7, Denver, CO.
36. Chair "Thin Films of Block Copolymers and Hybrid Materials III – Surface, Wetting, and Confinement Interactions", 2014 APS March Meeting, March 3-7, Denver, CO. (*not listed in program bulletin*)
37. Co-Chair, "Nanoscale Structure in Polymers" (Area 8a), AIChE Annual Meeting, November 13-18, 2016, San Francisco, CA.
38. Chair, "Ion-Containing Polymers", 2017 APS March Meeting, March 13-17, New Orleans, LA.
39. Chair, "Nanostructured Polymer Films" (Area 8a), AIChE Annual Meeting, October 29-November 3, 2017, Minneapolis, MN.

#### **Editorial Advisory Boards:**

Macromolecules [ACS] (2011-2014)

ACS Macro Letters [ACS] (2012-2014)

Polymer Chemistry [RSC] (2013-2015)

Journal of Polymer Science: Polymer Physics [Wiley] (2015-Present)

Soft Matter [RSC] (2015-Present)

#### **Editorial Boards:**

Journal of Macromolecular Science: Pure and Applied Chemistry (2008-Present)

#### **Reviewer for Journals and Organizations:**

ACS Applied Materials and Interfaces, ACS Macro Letters, ACS Nano, Advanced Materials, Biomacromolecules, Chemistry of Materials, European Polymer Journal, Journal of Physical Chemistry, Journal of Polymer Science Part B: Polymer Physics, Langmuir, Macromolecular Chemistry and Physics, Macromolecular Rapid Communications, Macromolecules, MRS Communications, Nano Letters, Nature Chemistry, Nature Communications, Nature Materials, Physical Review Letters, Physical Review E, Polymer, Polymer Chemistry, Proceedings of the National Academy of Sciences (PNAS), Science, Soft Matter, Wiley Book Publishing

\* Top 100 Reviewer Citation for Macromolecules (2007)

\* Top 100 Reviewer Citation for Macromolecules (2011)

- \* Top 100 Reviewer Citation for Macromolecules (2013)
- \* Top 250 Reviewer Citation for Macromolecules (2015)

National Science Foundation: Ad-hoc and panel reviewer for MPS (DMR and CHE), CBET, and OISE; Petroleum Research Fund, American Chemical Society: Ad-hoc reviewer; Department of Energy: Ad-hoc and panel reviewer; Air Force Office of Scientific Research: Ad-hoc reviewer; Stanford Synchrotron Radiation Lightsource (SSRL) reviewer; Netherlands Organisation for Scientific Research: Ad-hoc reviewer

### **Advisory Boards:**

National Academies' Condensed Matter and Materials Research Committee (CMMRC) (2017-present)

Lincoln University - Engineering Sciences Degree Program Advisory Committee, for Civil/ Environmental, Computer/Electrical, and Materials Science concentrations (2016-present).

National Institute of Standards and Technology: Center for Neutron Research - Beamtime Allocation Committee (SANS/USANS) (2015-present)

Brookhaven National Laboratory - National Synchrotron Light Source - Beamline Advisory Team for Soft Matter Interfaces Beamline (2014-present)

American Chemical Society - Development Advisory Board (2014-present)

### **Department, College, and University Service at Delaware:**

#### **University Level**

2016-2017	University Promotion and Tenure Commission
2015-2016	University Strategic Planning Implementation Committee
2015-2016	Co-Chair of University Strategic Planning Implementation Subcommittee on Multidisciplinary Research and Scholarship
2015-2016	University Ad-hoc Committee on Diversity Training
2014-2015	University Strategic Planning Subcommittee
2012-2013	Search Committee - Provost
2012-2014	President's Diversity Initiative Advisory Committee
2012-2015	Diversity Director NSF IGERT Program at UD and DBI
2010	Search Committee - Director of Federal Government Relations

#### **College Level**

2016-present	Faculty Diversity in Engineering Working Group
2015-2016	Ad-hoc Dean's Committee on Diversity in Engineering
2014-present	W. M. Keck Microscopy Advisory Board
2014-present	Organizing Committee for GO LEAD (Graduate Opportunities: Learn, Engage, AND Discover) Program
2013-2014	Faculty Search Committee (Soft Materials Cluster)
2013	W. M. Keck Microscopy Facility Senior Researcher Search Committee
2012	W. M. Keck Microscopy Facility Research Associate Search Committee
2010-2011	Faculty Search Committee (Soft Materials Chemistry Cluster)
2010	Planning Committee - Success Strategies for Emerging Faculty Workshop
2009-2016	American Chemical Society, Project SEED Mentor
2009-2010	Faculty Search Committee (Materials Science and Engineering)
2009	American Chemical Society, Project SEED Site Coordinator

#### **Department Level**

2017-present	Ad-hoc expedited Promotion and Tenure Committee (MSEG)
2016-present	Undergraduate Advising
2014-present	NSF-REU Site Proposal and Program Coordinator (with E. Furst)

2014-2016	Gore Professor Search Committee
2013-2015	Graduate Curriculum Committee (Chair)
2013-present	Biomedical Engineering Faculty Mentoring Committee (John Slater)
2013-2016	Undergraduate Advising
2012	Search Committee for Department Chair
2010-2013	Ad-hoc Diversity Committee (Chair)
2008-2011	Associate Graduate Recruiting Coordinator
2008-2009	Seminar Coordinator
2008-2009	Ad-hoc Graduate Thesis Committee Revision Committee
2007-2012	Undergraduate Advising
2007-2013	Graduate Admissions Committee
2007	Ad-hoc Undergraduate Brochure Committee
2007	Newark High School Outreach Panel Organizer
2006-2011	NSF-REU Site Proposal and Program Coordinator (with J. Lauterbach)

### **Other External Service**

1. Lincoln University - Engineering Sciences Degree Program Advisory Committee, for Civil/Environmental, Computer/Electrical, and Materials Science concentrations (2016-present).
2. Delaware State University - Co-development of a Polymer Science course with Dr. Preston Hayward in the DSU Chemistry Department.
3. University of Delaware - Speaker at high school chemistry teachers day workshop in the Department of Chemistry and Biochemistry (Fall 2007)
4. University of Delaware - Speaker and panel member at Responsible Conduct of Research Seminar for graduate students, faculty, and other researchers (Spring 2009)
5. Massachusetts Institute of Technology - Educational Councilor, responsible for interviewing Newark, DE area applicants to MIT's undergraduate program (2009-2012)
6. Featured in Scratchcat - Fresh Science DVD "Making Work Easier" (2008)
7. American Chemical Society Project SEED Site Organizer at University of Delaware (College of Engineering) (2009)
8. American Chemical Society Scholars Program Advisor (2013-2016)
9. American Chemical Society Development Advisory Board (2014-present)
10. American Physical Society – DPOLY Education Committee (2014-2015)
11. 3D Engineers and Entrepreneurs (Wilmington, DE) – Advisory Board (2015-2016)