

Curriculum Vitae of Darrin J. Pochan

Materials Science and Engineering, Biomedical Engineering, and Delaware Biotechnology Institute
201 P.S. DuPont Hall
University of Delaware
Newark, DE 19716

Date of Birth: April 9th, 1970

Education and Experience

- Professor of Materials Science and Engineering, University of Delaware, 8/2008 – present
- Professor of Biomedical Engineering, University of Delaware, 2010 – present
- Joint appointment as Professor of Chemistry and Biochemistry, 2008-present
- Associate editor for North America, Soft Matter, Royal Society of Chemistry, U.K., 2005-present
- Associate Professor of Materials Science and Engineering, University of Delaware, 6/2005 – 8/2008
- Assistant Professor of Materials Science and Engineering, University of Delaware, 9/1999 – 5/2005
- National Research Council Post-doc Research Associate, 1997 – 7/1/1999, Electronics Appls. Group, Polymer Division, National Institute of Standards and Technology. Group Leader: Dr. Wen-li Wu
- Ph.D., Sept 1992-1997 (M.S., May 1995), Polymer Science and Engineering, University of Massachusetts, Amherst, Massachusetts. Research Advisor: Prof. Sam Gido
- B.S., 1988-1992, Chemistry (Physical), *with honors*, University of Wisconsin, Madison, Wisconsin. Research Advisor: Dr. Hyuk Yu

Honors during appointment at the University of Delaware

- Named Fellow of the American Chemical Society, PMSE Division, 2013
- Named NextPower Distinguished Chair Professor, National Tsing Hua University, Taiwan, 2012
- Named Fellow of the American Physical Society, 2011
- John H. Dillon medal, Division of Polymer Physics, American Physical Society, 2007
- College of Engineering Outstanding Young Faculty Award, University of Delaware, 2006
- Named Fellow of the Royal Society of Chemistry, 2005
- NSF Career award, 2004-2009
- DuPont Young Professor Grant, 2002-2005 (one of 8 total nationally, 13 total internationally)
- Chair of 2009 Macromolecular Materials Gordon Research Conference
- Appointed as Associate Editor for North America of Soft Matter published by the Royal Society of Chemistry, U.K., 2005.

Honors prior to appointment at the University of Delaware

- National Research Council Post-doctoral Research Associate, 1997 – 7/1/1999, Electronics Applications Group, Polymer Division, National Institute of Standards and Technology.
- Shell Fellow, 1992-1993, Polymer Science and Engineering, University of Massachusetts, Amherst, Massachusetts.

Professional Society Membership:

American Chemical Society
American Physical Society
Materials Research Society
Neutron Scattering Society of America
Royal Society of Chemistry

Research

Key Research Concepts:

Material construction via molecular solution assembly, biomaterials, hydrogels, polyelectrolytes, block copolymer self-assembly, nanomaterials, inorganic/organic hybrid materials, thin film/interfacial behavior of polymer molecules, transmission and scanning electron microscopy, atomic force microscopy, laser scanning confocal microscopy, neutron/x-ray/light scattering on soft materials.

University of Delaware Research Center memberships:

Delaware Biotechnology Institute

Nemours Center for Childhood Cancer Research

Center for Translational Cancer Research (CTCR)

Center for Molecular and Engineering Thermodynamics (CMET)

Delaware Environmental Institute (DENIN)

Research Publications (109 total):

- 1) Zhu, J.; Zhang, S.; Zhang, F.; Wooley, K.L.; Pochan, D.J. "Hierarchical assembly of complex block copolymer nanoparticles into multicompartment superstructures through tunable inter-particle associations," *Advanced Functional Materials*, 2012, 23, 1767–1773.
- 2) Zhang, S.; Zou, J.; Zhang, F.; Elsabahy, M.; Felder, S.; Zhu, J.; Pochan, D.J.; Wooley, K.L. "Rapid and versatile construction of diverse and functional nanostructures derived from a polyphosphoester-based bio-mimetic block copolymer system," *Journal of the American Chemical Society*, 2012, 134, 18467-18474.
- 3) Ikeda, M.; Ochi, R.; Kurita, Y.; Pochan, D.J.; Hamachi, I. "Heat-Induced Morphological Transformation of Supramolecular Nanostructures by Retro-Diels-Alder Reaction," *Chemistry-A European Journal*, 2012, 18, 13091-13096.
- 4) Pochan, D.J. "Approaching Asymmetry and Versatility in Polymer Assembly," *Science*, 2012, 337, 530-531.
- 5) Ogunsola, O.A.; Kraeling, M.E.; Zhong, S.; Pochan, D.J.; Bronaugh, R.L.; Raghavan, S.R. Structural Analysis of "Flexible" Liposome Formulations: New Insights into the Skin-Penetrating Ability of Soft Nanostructures," *Soft Matter*, 2012, 8, 10226-10232.
- 6) Xiao, L.; Zhu, J.; Londono, J.D.; Pochan, D.J.; Jia, X. "Mechano-responsive hydrogels crosslinked by block copolymer micelles," *Soft Matter*, 2012, 8, 10233 – 10237.
- 7) Yan, C.; Mackay, M.E.; Czymmek, K.; Nagarkar, R.P.; Schneider, J.P.; Pochan, D.J. "Injectable Solid Peptide Hydrogel as a Cell Carrier: Effects of Shear Flow on Hydrogels and Cell Payload," *Langmuir*, 2012, 28, 6076-6087.
- 8) Krishna, O.D.; Wiss, K.T.; Luo, T.; Pochan, D.J.; Theato, P.; Kiick, K.L. "Morphological Transformations in a Dually Thermoresponsive Coil-Rod-Coil Bioconjugate," *Soft Matter*, 2012, 8, 3832-3840.

- 9) Knerr, P.J.; Branco, M.C.; Nagarkar, R.; Pochan, D.J.; Schneider, J.P. "Heavy Metal Ion Hydrogelation of a Self-assembling Peptide via Cysteiny Chelation," *Journal of Materials Chemistry*, 2012, 22, 1352-1357.
- 10) Giano, M.; Jin, A.; Pochan, D.; Schneider, J. "Controlled biodegradation of Self-assembling beta-hairpin Peptide hydrogels by proteolysis with matrix metalloproteinase-13," *Biomaterials*, 2011, 32, 6471-6477.
- 11) Nagy, K.; Giano, M.; Jin, A.; Pochan, D.; Schneider, J. "Enhanced Mechanical Rigidity of Hydrogels Formed From Enantiomeric Peptide Assemblies," *Journal of the American Chemical Society*, 2011, 133, 14975-14977.
- 12) Meeuwissen, S.A.; Kim, K.T.; Chen, Y.; Pochan, D.J.; van Hest, J.C.M. "Controlled Shape Transformation of Polymersome Stomatocytes," *Angewandte Chemie-Int Ed.*, 2011, 50, 7070-7073.
- 13) Top, A.; Roberts, C.; Pochan, D.J.; Kiick, K.L. "Controlling assembly of helical polypeptides via PEGylation strategies," *Soft Matter*, 2011, 7, 9758-9766.
- 14) Altunbas, A.; Lee, S.J.; Rajasekaran, S.A.; Schneider, J.P.; Pochan, D.J. "Encapsulation of Curcumin in Self-Assembling Peptide Hydrogels as Injectable Drug Delivery Vehicles," *Biomaterials*, 2011, 32, 5906-5914. NIHMSID292626
- 15) Micklitsch, C.M.; Knerr, P.J.; Branco, M.C.; Nagarkar, R.; Pochan, D.J.; Schneider, J.P. "Zinc-Triggered Hydrogelation of a Self-Assembling beta-Hairpin Peptide," *Angewandte Chemie-Int. Ed.*, 2011, 50, 1577-1579.
- 16) Lin, L.Y.; Lee, N.S.; Zhu, J.; Nystrom, A.M.; Pochan, D.J.; Dorshow, R.B.; Wooley, K.L. "Tuning core vs. shell dimensions to adjust the performance of nanoscopic containers for the loading and release of doxorubicin," *Journal of Controlled Release*, 2011, 152, 37-48.
- 17) Greene, A.C.; Zhu, J.H.; Pochan, D.J.; Jia, X.Q.; Kiick, K.L. "Poly(acrylic acid-b-styrene) Amphiphilic Multiblock Copolymers as Building Blocks for the Assembly of Discrete Nanoparticles," *Macromolecules*, 2011, 44, 1942-1951.
- 18) Wang, X.Y.; Gurski, L.A.; Zhong, S.; Xu, X.A.; Pochan, D.J.; Farach-Carson, M.C.; Jia, X.Q. "Amphiphilic Block Co-polyesters Bearing Pendant Cyclic Ketal Groups as Nanocarriers for Controlled Release of Camptothecin," *Journal of Biomaterials Science-Polymer Edition*, 2011, 22, 1275-1298.
- 19) Grieshaber, S.E.; Nie, T.; Yan, C.; Zhong, S.; Teller, S.S.; Clifton, R.J.; Pochan, D.J.; Kiick, K.L.; Jia, X. "Assembly Properties of Alanine-Rich, Lysine-Containing Peptide and the Formation of Peptide/Polymer Hybrid Hydrogels," *Macromol. Chem. Phys.*, 2011, 212, 229-239.
- 20) Pochan, D.J.; Zhu, J.H.; Zhang, K.; Miesch, C.; Emrick, T.S.; Wooley, K.L. "Multicompartment and Multigeometry Nanoparticle Assembly," *Soft Matter*, 2011, 7, 2500 - 2506
- 21) Bartels, J. W.; Cauet, S. I.; Billings, P. L.; Lin, L. Y.; Zhu, J. H.; Fidge, C.; Pochan, D. J.; Wooley, K. L. Evaluation of Isoprene Chain Extension from PEO Macromolecular Chain Transfer Agents for the Preparation of Dual, Invertible Block Copolymer Nanoassemblies. *Macromolecules*, 2010, 43, 7128-7138.
- 22) Yu, X. F.; Zhong, S.; Li, X. P.; Tu, Y. F.; Yang, S. G.; Van Horn, R. M.; Ni, C. Y.; Pochan, D. J.; Quirk, R. P.; Wesdemiotis, C.; Zhang, W. B.; Cheng, S. Z. D., A Giant Surfactant of Polystyrene-(Carboxylic Acid-Functionalized Polyhedral Oligomeric Silsesquioxane) Amphiphile with Highly

- Stretched Polystyrene Tails in Micellar Assemblies. *Journal of the American Chemical Society*, 2010, 132, 16741-16744.
- 23) Kim, K. T.; Zhu, J. H.; Meeuwissen, S. A.; Cornelissen, J.; Pochan, D. J.; Nolte, R. J. M.; van Hest, J. C. M., Polymersome Stomatocytes: Controlled Shape Transformation in Polymer Vesicles. *Journal of the American Chemical Society*, 2010 132, 12522-12524.
 - 24) Yan, C. Q.; Altunbas, A.; Yucel, T.; Nagarkar, R. P.; Schneider, J. P.; Pochan, D. J., Injectable solid hydrogel: mechanism of shear-thinning and immediate recovery of injectable beta-hairpin peptide hydrogels. *Soft Matter*, 2010, 6, 5143-5156. PMID: PMC3091287
 - 25) Yan, C. Q.; Pochan, D. J., Rheological properties of peptide-based hydrogels for biomedical and other applications. *Chemical Society Reviews*, 2010, 39, 3528-3540. PMID: NIHMS291439
 - 26) Xiao, L. X.; Liu, C.; Zhu, J. H.; Pochan, D. J.; Jia, X. Q., Hybrid, elastomeric hydrogels crosslinked by multifunctional block copolymer micelles. *Soft Matter*, 2010, 6, 5293-5297. PMID: PMC3027150
 - 27) Branco, M. C.; Pochan, D. J.; Wagner, N. J.; Schneider, J. P., The effect of protein structure on their controlled release from an injectable peptide hydrogel. *Biomaterials*, 2010, 31, 9527-9534. PMID: PMC2976777
 - 28) Rughani, R. V.; Branco, M. C.; Pochan, D.; Schneider, J. P., De Novo Design of a Shear-Thin Recoverable Peptide-Based Hydrogel Capable of Intrafibrillar Photopolymerization. *Macromolecules*, 2010, 43, 7924-7930.
 - 29) Sharma, N.; McKeown, S. J.; Ma, X.; Pochan, D. J.; Cloutier, S. G., Structure-Property Correlations in Hybrid Polymer-Nanoparticle Electrospun Fibers and Plasmonic Control over their Dichroic Behavior. *Acs Nano*, 2010, 4, 5551-5558.
 - 30) Hayward, R.C. and Pochan, D.J. "Tailored Assemblies of Block Copolymers in Solution: It is All about the Process," *Macromolecules*, 2010, 8, 3577-3584
 - 31) Katz, J.S.; Zhong, S.; Ricart, B.G. Pochan, D.J.; Hammer, D.A.; Burdick, J.A. "Modular Synthesis of Biodegradable Diblock Copolymers for Designing Functional Polymersomes." *JACS*, 2010, 132, 3654+. PMID: PMC2856336
 - 32) Nagarkar, R.P.; Hule, R.A.; Pochan, D.J.; Schneider, J.P. "Domain Swapping in Materials Design." *Biopolymers*, 2010, 94, pp 141-155. PMID: 20091872
 - 33) Sharma, N.; Jaffari, G.H.; Shah, S.I.; Pochan, D.J. "Orientation-dependent magnetic behavior in aligned nanoparticle arrays constructed by coaxial electrospinning," *Nanotechnology*, 2010, vol 21, Article Number: 085707).
 - 34) Zhong, S.; Pochan, D.J. "Cryogenic transmission electron microscopy for direct observation of polymer and small molecule materials and structures in solution," *Polymer Reviews*, 2010, 50, 287-320.
 - 35) Altunbas, A.; Sharma, N.; Lamm, M.S.; Yan, C.; Nagarkar, R.P.; Schneider, J.P.; Pochan, D.J. "Peptide-Silica Hybrid Networks: Biomimetic Control of Network Mechanical Behavior," *ACS Nano*, 2009, 4, 181-188. PMID: 20028097
 - 36) Salick, D.A.; Pochan, D.J.; Schneider, J.P. "Design of an Injectable beta-Hairpin Peptide Hydrogel That Kills Methicillin-Resistant Staphylococcus aureus," *Advanced Materials*, 2009, 21, 4120+.

- 37) Sharma, N.; Top, A.; Kiick, K.L.; Pochan, D.J. "One-Dimensional Gold Nanoparticle Arrays by Electrostatically Directed Organization Using Polypeptide Self-Assembly," *Angewandte Chemie*, 2009, 48, 7078-7082.
- 38) Rajagopal, K.; Lamm, M.S.; Haines-Butterick, L.A.; Pochan, D.J.; Schneider, J.P. "Tuning the pH Responsiveness of beta-Hairpin Peptide Folding, Self-Assembly, and Hydrogel Material Formation," *Biomacromolecules*, 2009, 10, 2619-2625.
- 39) Pochan, D.J. "Soft Matter: Spots and Stripes," *Nature Materials*, 2009, 8, 773-774.
- 40) Hamley, I.W.; Krysmann, M.J.; Kellarakis, A.; (Castelletto, V.; Noirez, L.; Hule, R. A.; Pochan, D. J. "Nematic and Columnar Ordering of a PEG-Peptide Conjugate in Aqueous Solution," *Chemistry-A European Journal*, 2008, 14, 11268-.
- 41) Amir, R.J.; Zhong, S.; Pochan, D.J.; Hawker, C.J. "Enzymatically Triggered Self-Assembly of Block Copolymers," *Journal Of The American Chemical Society*, 2009, 131, 13949-.
- 42) Hule, R.A.; Nagarkar, R.; Hammouda, B.; Schneider, J.P.; Pochan, D.J. "Dependence of Self-Assembled Peptide Hydrogel Network Structure on Local Fibril Nanostructure," *Macromolecules*, 2009, 2, 7137-7145. PMID: PMC3091019
- 43) Branco, M.C.; Nettesheim, F.; Pochan, D.J.; Schneider, J.P; Wagner, N.J. "Fast Dynamics of Semiflexible Chain Networks of Self-Assembled Peptides," *Biomacromolecules*, 2009, 10, 1374-1380.
- 44) Rughani, R.V.; Salick, D.A.; Lamm, M.A.; Yucel, T.; Pochan, D.J.; Schneider, J.P. "Folding, Self-assembly and Bulk Material Properties of a De Novo Designed Three-Stranded β -sheet Hydrogel," *Biomacromolecules*, 2009, 10, 1295-1304.
- 45) Jha, A.K.; Hule, R.A.; Jiao, T.; Teller, S.S.; Clifton, R.J.; Duncan, R.L.; Pochan, D.J.; Jia, X.Q. "Structural Analysis and Mechanical Characterization of Hyaluronic Acid-Based Doubly Cross-Linked Networks," *Macromolecules*, 2009, 42, 537-546.
- 46) Kratz, K.; Breitenkamp, K.; Hule, R.; Pochan, D.; Emrick, T. "PC-Polyolefins: Synthesis and Assembly Behavior in Water," *Macromolecules*, 2009, 42, 3227-3229.
- 47) Cui, H.; Chen, Z.; Wooley, K.L.; Pochan, D.J. "Origins of toroidal micelle formation through charged triblock copolymer self-assembly," *Soft Matter*, 2009, 5, 1269 – 1278.
- 48) Castelletto, V.; Hamley, I.W.; Hule, R.A.; Pochan, D. "Helical-Ribbon Formation by a beta-Amino Acid Modified Amyloid beta-Peptide Fragment," *Angewandte Chemie-International Ed.*, 2009, 48, 2317-2320.
- 49) Branco M.C.; Pochan D.J.; Wagner N.J.; Schneider J.P. "Macromolecular diffusion and release from self-assembled beta-hairpin peptide hydrogels." *Biomaterials*. 2009, 7, 1339-47.
- 50) Haines-Butterick, L.A.; Salick, D.A.; Pochan, D.J.; Schneider, J.P. "In vitro assessment of the pro-inflammatory potential of b-hairpin peptide hydrogels" *Biomaterials*, 2008, 29, 4164–4169. PMID: PMC2645339

- 51) Hule, R.A.; Nagarkar, R.P.; Altunbas, A.; Ramay, H.R.; Branco, M.C.; Schneider, J.P.; Pochan, D.J. "Correlations between structure, material properties and bioproperties in self-assembled -hairpin peptide hydrogels," *Faraday Discussions*, 2008, *139*, 251-264.
- 52) Yucel, T.; Micklitsch, C.; Schneider, J.P.; Pochan, D.J. "Direct Observation of Early-Time Hydrogelation in β -Hairpin Peptide Self-Assembly," *Macromolecules*, 2008, *41*, 5763 - 5772.
- 53) Krysmann, M.J.; Kellarakis, A.; Castelletto, V.; Noirez, L.; Hule, R.A.; Pochan, D.J.; Hamley, I.W. "Nematic & Columnar Ordering of a PEG-Peptide Conjugate in Aqueous Solution," *Chemistry: A European Journal*, 2008, *14*, 11369 – 11375.
- 54) Hales, K.; Chen, Z.; Wooley, K.L.; Pochan, D.J. "Nanoparticles with tunable internal structure from charged triblock copolymer self-assembly," *Nano Letters*, 2008, *8*, 2023 – 2026
- 55) Krysmann M.J.; Castelletto, V.; Kellarakis, A.; Hule, R.A.; Pochan, D.J.; Hamley, I.W. "Self-assembly and hydrogelation of an amyloid peptide fragment," *Biochemistry*, 2008, *47*, 4597-4605.
- 56) Nagarkar, R.; Hule, R.A.; Pochan, D.J.; Schneider, J.P. "De Novo Design of Strand-Swapped beta-Hairpin Hydrogels," *Journal of the American Chemical Society*, 2008, *130*, 4466-74.
- 57) Zhong, S.; Cui, H.; Chen, Z.; Wooley, K.L.; and Pochan, D.J. "Helix self-assembly through the coiling of cylindrical micelles," *Soft Matter*, 2008, vol. 4, pp. 90-93.
- 58) Salick, D.A.; Kretsinger, J.K.; Pochan, D.J.; Schneider, J.P. "Inherent Antibacterial Activity of a Peptide-Based -Hairpin Hydrogel," *J. Am. Chem. Soc.*, 2007, *129*, 14793-9.
- 59) Pressly, E.D.; Rossin, R.; Hagooley, A.; Fukukawa, K.; Messmore, B.W.; Welch, M.J.; Wooley, K.L.; Lamm, M.; Hule, R.; Pochan, D.; Hawker, C.J. "Structural Effects on the Biodistribution and PET Imaging of Well-defined ^{64}Cu -Labeled Nanoparticles Comprised of Amphiphilic Block Graft Copolymers," *Biomacromolecules*, 2007; *8*; 3126-3134.
- 60) Ozbas, B.; Rajagopal, K.; Haines-Butterick, L.; Schneider, J.P., Pochan, D.J. "Reversible Stiffening Transition in β -Hairpin Hydrogels Induced by Ion Complexation," *Journal of Physical Chemistry*, 2007, *111*, 13901-8.
- 61) Lamm, M.S.; Sharma, N.; Beyer, F.L.; Schneider, J.P.; Pochan, D.J. "Laterally Spaced Linear Nanoparticle Arrays Templated by Laminated β -Sheet Fibrils," *Advanced Materials*, 2008, *20*, 447-451.
- 62) Cui, H.; Chen, Z.; Zhong, S.; Wooley, K.L.; Pochan, D.J. "Advance in Structural Complexity of Block Copolymer Assembly via Kinetics Control," *Science*, 2007, *317*, 647-650.
- 63) Cui, H.; Hodgdon, T.K.; Kaler, E.W.; Abezgaous, L.; Danino, D.; Lubovsky, M.; Talmon, Y.; Pochan, D.J. "Elucidating the Assembled Structure of Amphiphiles in Solution via Cryogenic-Transmission Electron Microscopy," *Soft Matter*, 2007, *3*, 945-955.
- 64) Haines-Butterick, L.; Rajagopal, K.; Pilarz, M.; Lamm, M.S.; Pochan, D.J.; Schneider, J.P. "Controlling Hydrogelation Kinetics via Peptide Design for Three-Dimensional Encapsulation and Injectable Delivery of Cells," *PNAS*, 2007, *104*, 7791-7796.

- 65) Li, Z.; Chen, Z.; Cui, H.; Hales, K.; Wooley, K.L.; Pochan, D.J. "Controlled Stacking of Charged Block Copolymer Micelles", *Langmuir*, 2007, 23, 4689-4694.
- 66) Thiel, J.; Pakstis, L.; Buzby, S.; Raffi, M.; Pochan, D.J.; Shah, S.I. "Antibacterial Properties of Silver doped Titania," *Small*, 2007, 3, 799-803.
- 67) Shearer, A.S.; de Miguel, Y.R.; Minich, E.A.; Pochan, D.; Jenny, C. "Polymer-supported metallocene catalysts for ethylene polymerisation: Characterisation and catalytic studies," *Inorganic Chemistry Communications*, 2007, 10, 262-264.
- 68) Hule, R.; Pochan, D.J. "Polymer Nanocomposites for Biomedical Applications," *MRS Bulletin*, 2007, 32, 354-358.
- 69) Hule, R.; Pochan, D.J. "Polypeptide-Based Layered Silicate Nanocomposite: Effect of Poly-l-lysine Secondary Structure on the Physical Properties of the Hybrid," *Journal of Polymer Science, Polymer Physics*, 2007, 45, 239-252.
- 70) Hales, K.E.; Pochan, D.J.; "Using Polyelectrolyte Block Copolymers to Tune Nanostructure Assembly," *Current Opinion in Colloid and Interfacial Science*, 2006, 11, 330-336.
- 71) Jones, M.-C.; Tewari, P.; Blei, C.; Hales, K.; Pochan, D.J.; Leroux, J.-C. "Self-Assembled Nanocages for Hydrophilic Guest Molecules," *Journal of the American Chemical Society*, 2006, 128, 14599-14605.
- 72) Cui, H.; Chen, Z.; Wooley, K.L.; Pochan, D.J. "Controlling Micellar Structure of Amphiphilic Charged Triblock Copolymers in Dilute Solution via Co-assembly with Organic Counterions of Different Spacer Lengths," *Macromolecules*, 2006, 127, 8592-8593.
- 73) C. Veerman, C.; Rajagopal, K.; Palla, C.S.; Pochan, D.J.; Schneider, J.P.; Furst, E.M. "Gelation kinetics of beta-hairpin peptide hydrogels," *Macromolecules*, 2006, 39, 6608 -6614.
- 74) Ozbas, B.; Schneider, J.P.; Pochan, D.J. "Hydrogels Constructed via beta-Hairpin Peptide Self-Assembly," chapter 20 in Advances in Biopolymers: Molecules, clusters, networks and interactions, American Chemical Society ACS Symposium Series 935, 2006, pp. 284-297.
- 75) Rajagopal, K.; Ozbas, B.; Pochan, D.J.; Schneider, J.P. "Probing the Importance of Lateral Hydrophobic Association in Self-Assembling Peptide Hydrogelators" *European Biophysics Journal*, 2006; 35; 162-169.
- 76) Lamm, M.; Rajagopal, K.; Schneider, J.P.; Pochan, D.J. "Laminated Morphology of Non-twisting beta sheet fibrils constructed via peptide self-assembly," *Journal of the American Chemical Society*, 2005; 127, 16692-16700.
- 77) Haines, L.A.; Rajagopal, K.; Ozbas, B.; Salick, D.A.; Pochan, D.J.; Schneider, J.P. "Light Activated Hydrogel Formation via the Triggered Folding and Self-assembly of a Designed Peptide", *Journal of the American Chemical Society*, 2005; 127; 17025-17029.
- 78) Guertin, R.P.; Valluzzi, R.; Haas, T.E.; Pochan, D. "Magnetically Complexed Tissue-Mimicking Peptides," *Journal of Applied Physics*, 2005, 97 (10): Art. No. 10M521 Part 3.

- 79) Holowka, E.P.; Pochan, D.J.; Deming, T.J. "Charged Polypeptide Vesicles with Controllable Diameter," *Journal of the American Chemical Society*, 2005, *127*, 12423-12428.
- 80) Tomczak, M.M.; Glave, D.D.; Drummy, L.; Lawrence, C.G.; Stone, M.O.; Perry, C.C.; Pochan, D.J.; Deming, T.J.; Naik, R.R. "Polypeptide Templated Synthesis of Hexagonal Silica Platelets," *Journal of the American Chemical Society*, 2005, *127*, 12577-12582.
- 81) Cui, H.; Krikorian, V.; Thompson, J.; Nowak, A.P.; Deming, T.J., Pochan, D.J. "Preparation and Characterization of Synthetic Polypeptide Single Crystals with Controlled Thickness," *Macromolecules*, 2005, *38*, 7371-7377.
- 82) Krikorian, V.; Pochan, D.J. "Crystallization Behavior of Poly(l-lactic acid) Nanocomposites: Nucleation and Growth Probed by Infrared Spectroscopy", *Macromolecules*, 2005, *38*, 6520 -6527.
- 83) Li, Z.; Chen, Z.; Cui, H.; Hales, K.; Qi, K.; Wooley, K.L.; Pochan, D.J. "Disc Morphology and Disc-to-Cylinder Tunability of Poly(acrylic acid)-*b*-Poly(methyl acrylate)-*b*-Polystyrene Triblock Copolymer Solution-State Assemblies, *Langmuir*, 2005, *21*, 7533-7539.
- 84) Chen, Z.; Cui, H.; Hales, K.; Li, Z.; Qi, K.; Pochan, D.J.; Wooley, K.L. "Unique Toroidal Morphology from Composition and Sequence Control of Triblock Copolymers," *Journal of the American Chemical Society*, 2005, *127*, 8592-8593.
- 85) Kretsinger, J.K.; Haines, L.A.; Ozbas, B.; Pochan, D.J.; Schneider, J.P. "Cytocompatibility of Self-Assembled β -Hairpin Peptide Hydrogel Surfaces," *Biomaterials*, 2005, *26*, 5177-5186.
- 86) Ozbas, B.; Rajagopal, K.; Schneider, J.P.; Pochan, D.J. "Semiflexible Chain Networks Formed via Folding and Self-assembly of b-Hairpin Molecules," *Physical Review Letters*, 2004, *93* (26), article no.268106.
- 87) Pochan, D.J.; Chen, Z.; Cui, H.; Hales, K.; Qi, K.; Wooley, K.L. "Toroidal Triblock Copolymer Assemblies", *Science*, October 1, 2004, *306*, 94-97.
- 88) Ozbas, B.; Kretsinger, J.; Rajagopal, K.; Schneider, J.P.; Pochan, D.J. "Salt-Triggered Peptide Folding and Consequent Self-Assembly into Hydrogels with Tunable Modulus," *Macromolecules*, 2004, *37*, 7331-7337.
- 89) Krikorian, V.; Pochan, D.J. "Unusual Crystallization Behavior of Organoclay Reinforced Poly (L-lactic acid) Nanocomposites," *Macromolecules*, 2004, *37*, 6480-6491.
- 90) Bellomo, E.G.; Wyrsta, M.D.; Pakstis, L.; Pochan, D.J.; Deming, T.J., "Stimuli Responsive Polypeptide Vesicles via Conformation Specific Assembly", *Nature Materials*, 2004, *3*, 244-248.
- 91) Minich, E.A.; Nowak, A.P.; Deming, T.J.; Pochan, D.J. "Rod-rod and Rod-coil Self-Assembly and Phase Behavior of Polypeptide Diblock Copolymers", *Polymer*, 2004, *45*, 1951-1957.
- 92) Pakstis, L.; Nowak, A.P.; Deming, T.J.; Pochan, D.J. "The Effect of Chemistry and Morphology on the Biofunctionality of Self-Assembling Diblock Copolypeptide Hydrogels" *Biomacromolecules*, 2004, *5*, 312-318.

- 93) Baker, C.; Pradhan, A.; Pakstis, L.; Pochan, D.J.; Shah, S.I. "Synthesis and Antibacterial Properties of Silver Nanoparticles," *Journal of Nanoscience and Nanotechnology*, 2004, 5, 1.
- 94) Krikorian, V.; Pochan, D.J. "Poly(L-lactic acid)/Layered Silicate Nanocomposite: Fabrication, Characterization and Properties" *Chemistry of Materials*, 2003, 15, 4317-4324.
- 95) Pochan, D.J.; Schneider, J.S.; Kretsinger, J.; Ozbas, B.; Rajagopal, K.; Haines, L. "Thermally Reversible Hydrogels via Intramolecular Folding and Consequent Self-Assembly of a *de Novo* Designed Peptide" *JACS*, 2003, 125, 11802-11803.
- 96) Schneider, J.P.; Pochan, D.J.; Ozbas, B.; Rajagopal, K.; Pakstis, L.M. ; Gill, J. "Responsive Hydrogels from the Intramolecular Folding and Self-Assembly of a Designed Peptide" *JACS*, 2002, 124, 15030-15037.
- 97) Nowak, A.P.; Breedveld, V.; Pakstis, L.; Pine, D.J.; Pochan, D.J.; Deming, T.J. "Rapid Recovering Hydrogel Scaffolds From Self-Assembling Diblock Copolypeptide Amphiphiles" *Nature*, 2002, 417, 424 – 428.
- 98) Pochan, D.J.; Pakstis, L.; Ozbas, B.; Nowak, A.K.; Deming, T.J. "SANS and cryoTEM Study of Self-Assembled Diblock Copolypeptide Hydrogels with Rich Nano- through Microscale Morphology." *Macromolecules*, 2002, 35, 5358-5360.
- 99) Krikorian, V.; Nowak, A.P.; Deming, T.J.; Kurian, M.; Galvin, M.E.; Pochan, D.J. "Polypeptide-based Nanocomposite: Structure and Properties of Poly(L-lysine)/Na⁺-Montmorillonite" *J. Polym. Sci., Polym. Phys.*, 2002, 40, 2579-2586.
- 100) Pochan, D.J.; Pakstis, L.; Huang, E.H.; Hawker, C.J.; Vestberg, R.; Pople, J. "Architectural Disparity Effects in the Morphology of Dendrimer-Linear Coil Diblock Copolymers" *Macromolecules*, 2002, 35(24); 9239-9242.
- 101) Yu, M.; Nowak, A.P.; Pochan, D.J.; Deming, T.J. "Methylated Mono- and Diethyleneglycol Functionalized Polylysines: Nonionic, α -Helical, Water Soluble Polypeptides." *JACS*, 1999, 121, 12210-12211.

Refereed Publications: Research Performed Prior to Appointment at the University of Delaware

- 102) Pochan, D.J.; Lin, E.K.; Satija, S.K.; and Wu, W.L. "Thermal Expansion of Supported Thin Polymer Films: A Direct Comparison of Free Surface vs. Total Confinement" *Macromolecules*, 2001; 34(9); 3041-3045.
- 103) Pochan, D. J.; Gido, S. P.; Zhou, J.; Mays, J. W.; Whitmore, M. D.; Ryan, A. J. "Conformational Asymmetry Effects on the Equilibrium Microphase Separated Behavior of poly(isoprene-*block*-tert butylmethacrylate) Diblock Copolymers." *J. P. Sci., Polym. Phys.*, 1997, 35, 2629-2643.
- 104) Pochan, D. J.; Gido, S. P.; Pispas, S.; Mays, J. W.; Ryan, A. J.; Fairclough, P.; Hamley, I. W.; Terrill, N. "Morphologies of Microphase Separated A₂B Simple Graft Copolymers." *Macromolecules*, 1996, 29, 5091-5098.

- 105) Pochan, D.J.; Gido, S.G.; Pispas, S.; Mays, J.W. "Morphological Transitions in an I₂S Simple Graft Block Copolymer: From Folded Sheets to Folded Lace to Randomly Oriented Worms at Equilibrium." *Macromolecules*, 1996, 29, 5099-5105.
- 106) Gido, S. P.; Lee, C.; Pochan, D. J.; Pispas, S.; Mays, J. W.; Hadjichristidis, N. "Synthesis, Characterization, and Morphology of Model Graft Copolymers with Trifunctional Branch Points." *Macromolecules*, 1996, 29, 7022-7028.

Refereed Publications: Research Performed Prior to Appointment at the University of Delaware, Conference proceedings

- 107) Lin, E.; Pochan, D. J.; Satija, S.K.; Wu, W.L.* "Neutron Reflectivity Measurements of Polymer Interdiffusion Near The Polymer/Solid Interface." *MRS Proceedings*, 2000, 629.
- 108) Pochan, D.J.; Lin, E.; Satija, S.K.; Cheng, S.Z.D.; Wu, W.L.* "Thermal Expansion and Glass Transition Behavior of Thin Polymer Films with and without a Free Surface via Neutron Reflectometry." *MRS Proceedings*, 1999, 543.
- 109) Pochan, D.J.; Lin, E.; Satija, S.K.; Cheng, S.Z.D.; Wu, W.L.* "Thermal Expansion and Glass Transition Behavior of Thin Polymer Films with and without a Free Surface via Neutron Reflectometry." *MRS Proceedings*, 1999, 543.

Books Edited:

Materials Research Society Fall 2004 national meeting, Symposium Q Proceedings:
Neutron and X-Ray Scattering as Probes of Multiscale Phenomena (co-editors Surita Bhatia and Peter Khalifah, UMass-Amherst

Patent Applications:

- 1) Novel Hydrogels and Uses Thereof, Patent 7884185, publication date 02/08/2011
- 2) Novel Hydrogels and Uses Thereof, Patent 7858585, publication date 12/28/2010
- 3) Novel Hydrogels and Uses Thereof DELIVERY OF HYDROGELS AS SPRAYS, Provisional Application Serial No 11657-00053-US1, filed March 19, 2008.
- 4) Stephens, J.P.; Pochan, D.J.; Rabolt, J.R. "Production of Nanowebs by an Electrostatic Spinning Apparatus and Method. Appl # 10/406,596.

Invited speaker presentations at international/national conferences and university seminars (156 total):

- 1) Case Western Reserve University, 50th anniversary symposium of Department of Macromolecular Science and Engineering, Macro Frontiers 2013, 6/7/2013.
- 2) Nanotech 2013, Bio Nano Materials symposium, Washington, D.C., 5/12/2013
- 3) Cambridge University, Cambridge, U.K. Department of Chemistry, Departmental Seminar, 5/3/2013
- 4) High Polymer conference, Pott Shrigley, Cheshire U.K. 4/30/13
- 5) American Chemical Society, Division of Polymer Materials Science and Engineering, Spring 2013 New Orleans, LA. ACS Award in Applied Polymer Science in honor of Prof. Mitch Winnik, 4/8/2013
- 6) American Physical Society spring 2013 national meeting, Baltimore, MD. Session J11 Dillon Medal Symposium, 3/19/11
- 7) Ohio State University, Department of Chemistry, Departmental Seminar, 2/12/2013
- 8) Next Power Distinguished Chair Professor lecture series, nanomaterials lecture, National Tsinghua University, Hsinchu, Taiwan 9/19/2012

- 9) Next Power Distinguished Chair Professor lecture series, Biomaterials lecture, National Tsinghua University, Hsinchu, Taiwan 9/18/2012
- 10) Next Power Distinguished Chair Professor lecture series, Exotic Nanoparticles lecture, National Tsinghua University, Hsinchu, Taiwan 9/14/2012
- 11) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2012 Philadelphia, PA. Polymeric Biomaterials, 8/21/2012
- 12) Gordon Research Conference, Polymer Physics, discussion leader, Mt. Holyoke College, South Hadley, MA, 7/22/2012
- 13) **Keynote: Lecture:** Warwick 2012 Polymers Conference, University of Warwick, Coventry, United Kingdom 7/10/2012.
- 14) IUPAC World Polymer Congress, Macro2012, Macromolecules and Nanotechnology: Hierarchically Structured and Biomimetic Polymers, Blacksburg, VA, 6/28/2012
- 15) Materials Research Society, spring 2012 national meeting, San Francisco, CA Symposium AAA: Synthesis, Fabrication, and Assembly of Functional Particles and Capsules, 4/10/2012
- 16) University of California-Berkeley, Department of Materials Science and Engineering, Departmental Seminar, Berkeley, CA, 4/5/2012
- 17) University of Colorado, Department of Chemical and Biological Engineering, Departmental Seminar, 3/13/2012
- 18) Allegheny College, Department of Chemistry, Department Seminar, Meadville, PA, 3/9/2012
- 19) Telluride Workshop on Interfacial Phenomena in Nanostructured Materials and Devices, Telluride, CO, 2/9/12
- 20) University of Connecticut, Institute for Materials Science seminar, 11/18/2011.
- 21) Exxon-Mobil research seminar, Baytown, TX, 11/11/11
- 22) University of Wisconsin, Department of Chemistry, Materials McElvain Seminar, 10/20/2011
- 23) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2011 Denver, CO. Function through Macromolecular Assembly, 8/29/11
- 24) University of Kyushu, Kyushu University Global COE Program, Science for Future Molecular Systems, ERATO seminar, 7/14/2011
- 25) National Taiwan University, Department of Materials Science and Engineering seminar, Taipei, Taiwan, 6/16/2011.
- 26) National Tsinghua University, Department of Chemical Engineering seminar, Hsinchu, Taiwan 6/15/2011.
- 27) National Academy of Engineering USA/Engineering Academy of Japan, 2011 Japan-America Frontiers of Engineering Symposium, Osaka, Japan 6/7/2011
- 28) Tsinghua University, Department of Chemical Engineering seminar, Beijing, China. 5/25/2011
- 29) Institute of Chemistry Seminar, Chinese Academy of Sciences, Beijing, China. 5/24/2011
- 30) University of Kyoto, Institute for Frontier Medical Sciences seminar, Kyoto, Japan. 4/18/2011
- 31) American Physical Society spring 2011 national meeting, Dallas, TX. Session J44 Focus Session: Kinetic Control of Solution Assemblies, 3/22/11
- 32) American Physical Society spring 2011 national meeting, Dallas, TX. Session L42 Dillon Medal Symposium, 3/22/11
- 33) Gordon Research Conference: Macromolecular Materials, speaker 1/10/2011
- 34) Indo-U.S. workshop on Fibrillar Gels, Trivandrum, Kerala, India, 1/6/2011
- 35) U of Kyoto, Department of Polymer Chemistry seminar, 11/15/2010
- 36) Translational Research Seminar, Helen F. Graham Cancer Center, Christiana Hospital, Wilmington, DE, 10/20/2010.
- 37) IUPAC World Polymer Congress, Macro2010, Polymers in therapeutics: polymer nanomedicines, Glasgow, U.K. 7/14/2010
- 38) Materials Research Society, spring 2010 national meeting, San Francisco, CA Symposium NN: Materials Exploiting Peptide and Protein Self Assembly - Toward Design Rules 4/9/2010

- 39) American Chemical Society, Division of Polymer Materials Science and Engineering, Spring 2010, San Francisco, CA., Peptides and Polypeptides: From Synthesis and Characterization to Application, 3/24/10
- 40) WE-Heraeus Seminar #454: Polymer-Nano-Particle Interactions, Bad Honnef, Germany 4/31/2010
- 41) Radboud University, Institute for Molecules and Materials seminar, Nijmegen, Netherlands 3/5/2010
- 42) Materials Research Society, fall 2009 national meeting, Boston, MA, Symposium QQ: Responsive Gels and Biopolymer Assemblies 12/3/09
- 43) Chevron Phillips Plenary Lecture, Macromolecules and Interfaces Institute, Virginia Polytechnic University, Blacksburg, VA 10/28/09
- 44) University of Sheffield, Dept. of Chemistry seminar, Sheffield, United Kingdom, 9/18/09
- 45) **Keynote Lecture**, Polymeric and Self-Assembling Hydrogels: From Fundamental Understanding to Applications in Biology and Medicine, Manchester, United Kingdom, 9/22/09.
- 46) Harvard Wyss Bioengineering Institute student seminar series, Cambridge, MA 9/15/09
- 47) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2009 Washington, D.C., Hybrid Smart Micro- and Nanoparticles, 8/18/08
- 48) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2009, Washington, D.C. Hybrid Soft Materials of Natural and Synthetic Polymers, 8/18/08
- 49) Associations in Solution II, Tomar, Portugal 7/28/09
- 50) Telluride Polymer Physics conference, Telluride, CO, 7/8/09
- 51) International Conference on Neutron Scattering, Session B5: Membranes and Biologically Relevant Materials, Knoxville, TN 5/7/09
- 52) Oak Ridge National Laboratory, Center for Nanophase Materials Science, Polymer seminar 5/5/09.
- 53) NSTI Nanotech 2009 Bionanomaterials symposium, Houston, TX 5/4/09
- 54) Syracuse University, Department of Biomedical and Chemical Engineering, Spring 2009 seminar series, Syracuse, N.Y. 3/6/09
- 55) Materials Research Society, spring 2009 national meeting, San Francisco, CA, Symposium NN: Synthesis of Bio-inspired Hierarchical Soft and Hybrid Materials 4/16/09
- 56) American Physical Society spring 2009 national meeting, Pittsburgh, PA. Session Y20: Biological-Synthetic Hybrid Materials, 3/20/09
- 57) Drexel University, Chemical Engineering Seminar Series, Philadelphia, PA 2/20/09
- 58) California Institute Technology, Materials Research Lecture Series, Pasadena, CA 1/28/09
- 59) MacroMex Joint U.S./Mexico Polymer Symposium, Los Cabos, Mexico, 12/9/08
- 60) University of Akron, Polymer Science Seminar Series, Akron, OH, 12/4/08
- 61) 3rd International Symposium on Polymer Science, Nagoya, Japan, 11/11/08
- 62) North Carolina State University, Chemical Engineering Seminar, Raleigh, N.C. 11/3/08
- 63) Multiscale Materials Modeling, Tallahassee, FL, Computational modeling of biological and soft condensed matter systems, 10/27/08
- 64) Bucknell University, Physics and Chemistry seminar, Lewisburg, PA 9/23/08.
- 65) McDaniel College, Department of Chemistry seminar, Westminster, MD 9/26/08.
- 66) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2008 national meeting of the Materials Research Society, Philadelphia, PA, Macromolecular Assemblies for Biomolecules, Cells and Tissues, 8/21/08
- 67) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2008 national meeting of the Materials Research Society, Philadelphia, PA, Responsive and Interactive Polymer Materials and Multicomponent Systems, 8/19/08
- 68) ISPAC (International Society for Polymer Analysis and Characterization) International Meeting, Newark DE, 6/10/08
- 69) Unilever Science Day, Unilever Research and Development, Shanghai, China 6/2/08
- 70) American Conference on Neutron Scattering, Sante Fe, NM, 5/13/08

- 71) Colorado State University, Department of Chemical and Biological Engineering seminar, Ft. Collins, CO, 5/9/08
- 72) Brooklyn Polytechnic University, Department of Chemical and Biological Engineering seminar, New York, NY 3/29/08
- 73) Northwestern University, Department of Materials Science and Engineering seminar, Evanston, IL, 2/18/08
- 74) Genzyme seminar, Framingham, MA, 12/17/07
- 75) Bausch and Lomb, seminar, Rochester, NY, 12/11/07
- 76) Electrical Engineering Nanoscience seminar series, University of Delaware, Newark, DE, 11/21/07
- 77) UCLA, Center for Nanoscale Science and Innovation (CNSI) Interdepartmental Seminar series, 10/23/2007
- 78) Georgia Institute of Technology, School of Polymer, Textile and Fiber Engineering Seminar Series, 10/15/2007
- 79) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2007 national meeting of the Materials Research Society, Boston, MA, Polypeptide and Protein Materials, 8/20/07
- 80) University of Athens, Department of Chemistry seminar, Athens, Greece, 7/16/07
- 81) University of Crete, F.O.R.T.H. research institute seminar series, Heraklion, Crete, Greece, 7/13/07
- 82) Protein Assembly in Materials, Biology, and Medicine, Direct Impact On Biological Nanosciences, Heraklion, Crete, Greece, 7/10/07
- 83) Unilever Research Microstructure Network Meeting, Unilever Corporation, Colworth, Bedford, U.K. 7/3/07
- 84) Materials Chemistry 8, Bionanotechnology symposium, London, U.K. 7/2/07
- 85) Rhodia, U.S.A. Corporate Research Laboratory, external seminar series, Bristol, PA 6/6/07
- 86) Nano Science and Technology Institute BioNano 2007, Soft Nanotechnologies and Applications symposium, Santa Clara, CA 5/21/07
- 87) Washington University in St. Louis, Department of Chemistry seminar series, St. Louis, MO., 5/16/07
- 88) State University of New York-Albany, Department of Chemistry seminar series, Albany, NY, 5/8/07
- 89) Materials Research Society, spring 2007 national meeting, San Francisco, CA, Symposium T: The Nature of Design-Using Nature's Portfolio 4/12/07
- 90) Pennsylvania State University, Department of Materials Science and Engineering seminar series, State College, PA, 4/3/07
- 91) American Chemical Society, Division of Polymer Chemistry, Spring 2007 national meeting of the American Chemical Society, Chicago, IL. Unconventional Processes for Nanostructured and Microstructured Polymer Systems-Novel Molecular Assembly, 3/28/07
- 92) **Keynote Lecture**, Physics of Self-assembling Peptides, Institute of Physics London, U.K. 3/22/07
- 93) Massachusetts Institute of Technology, Department of Materials Science and Engineering seminar series, Cambridge, MA 3/9/07
- 94) American Physical Society spring 2007 national meeting, Denver, CO. Session R4: John H. Dillon award symposium, award acceptance presentaion, 3/6/07
- 95) Carnegie Mellon University, Department of Biomedical Engineering and Materials Science and Engineering seminar series, 1/24/07
- 96) Gordon Research Conference, Polymers West, speaker 1/11/07
- 97) 8th annual New Jersey symposium on Biomaterials Science, Nanotechnology & Self-Assembled Systems, 9/10/2006
- 98) American Association of Pharmaceutical Science 2006 National meeting, 10/29/06
- 99) University of Leeds, U.K., Department of Physics seminar series, 10/13/06
- 100) Cornell University, Materials Science and Engineering seminar series, 9/28/06
- 101) University of Vermont, Department of Chemistry seminar series, 10/05/06

- 102) American Chemical Society, Division of Polymer Chemistry, 2006 Fall national meeting of the American Chemical Society, San Francisco, CA. Multicompartment Micelles: Higher Order Self-Assembly of Block Copolymers, 9/10/06.
- 103) Drexel University, Materials Science and Engineering seminar series, 5/23/06
- 104) Society of Plastic Engineers, ANTEC (Annual Technical Conference) Polymer Analysis, Polymers at Surfaces and Interfaces, 5/10/06
- 105) American Chemical Society, Division of Colloid and Surface Science, Spring 2006 national meeting of the American Chemical Society, Atlanta, GA. Reaction and Supramolecular Assembly in Complex Fluids, 3/27/06
- 106) American Physical Society spring 2006 national meeting, Baltimore, MD. Session R4: Ionic, Dipolar and H-bonding Polymers, 3/15/06
- 107) American Chemical Society-Lehigh Valley Section 2006 meeting keynote speaker, Muhlenberg College, Allentown, PA, 2/22/06
- 108) Hokkaido University, Nanotechnology Research Center Seminar series, Sapporo, Hokkaido, Japan 12/15/05.
- 109) Joint M.E.X.T.-N.S.F. Japan-U.S. Young Investigators in Bionanotechnology exchange symposium, Tokyo, Japan, 12/9/05.
- 110) University of Pennsylvania, Department of Materials Science and Engineering seminar series, 10/6/05
- 111) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall 2005 national meeting of the American Chemical Society, Washington, D.C. Biologically Enabled and Bioinspired Polymers symposium, 8/29/05
- 112) Telluride Polymer Physics conference, Telluride, CO, 7/27/05
- 113) Gordon Research Conference, Elastomers, Networks, and Gels, speaker Hanover N.H., 7/20/05
- 114) Materials Research Society, spring 2005 national meeting, San Francisco, CA, Symposium N: Polymer Gels for Emerging Technologies, 3/29/05
- 115) American Physical Society spring 2005 national meeting, Los Angeles, CA. Short course instructor on polyelectrolytes, 3/20/05
- 116) American Chemical Society, Division of Polymer Materials Science and Engineering, Spring 2005 national meeting of the American Chemical Society, San Diego, CA Bionanotechnology -- The Interface Between Biology and Polymer Science symposium, 3/17/05
- 117) Joint M.E.X.T.-N.S.F. Japan-U.S. Young Investigators in Bionanotechnology exchange symposium Northwestern University, 3/8/05
- 118) University of Delaware Biological Sciences seminar series 3/2/05
- 119) Unilever SPARK workshop, Port Sunlight, U.K. Unilever, Port Sunlight, United Kingdom, 4/4/05
- 120) Materials Research Society Fall 2004 national meeting, Boston MA, symposium P: Electron Microscopy of Molecular and Atom-Scale Mechanical Behavior, Chemistry, and Structure, 12/1/04
- 121) Materials Research Society Fall 2004 national meeting, Boston MA, Symposium W Mechanically Active Materials, 12/1/04
- 122) University of Maryland, Department of Materials Science and Engineering seminar series, 10/15/04
- 123) American Chemical Society, Division of Agricultural and Food Chemistry, Fall 2004 national meeting of the American Chemical Society, Philadelphia, PA Clusters, Networks, and Gels symposium, 8/23/04
- 124) University of Wisconsin, Department of Chemistry, Hyuk Yu retirement symposium, 5/21/04
- 125) Moretonhampstead High Polymer conference, Pott Shrigley, Cheshire U.K. 4/27/04
- 126) National Institute of Standards and Technology, Polymer Division seminar series, 2/26/04
- 127) Polytechnic University, Department of Chemical and Biological Sciences and Engineering seminar series, 2/20/04
- 128) DuPont young professor grant lecture, Central Research and Development, 1/28/04

- 129) Case Western Reserve University, Department of Macromolecular Science and Engineering seminar series 1/23/04
- 130) Rutgers, Department of Materials Science and Engineering seminar series 11/4/03
- 131) University of Massachusetts-Amherst, Polymer Science and Engineering Departmental Seminar Series, 10/24/03
- 132) American Chemical Society, Division of Physical Chemistry, Fall 2003 national meeting of the American Chemical Society, New York, NY, Block copolymer symposium, 9/9/03
- 133) Seventh American-German Polymer Symposium, Bayreuth, Weidenberg, Germany, 7/24/03
- 134) IconUSAS International Conference on Ultra-small angle scattering, Oak Ridge TN, 7/10/03
- 135) Stevens Institute of Technology, Chemistry and Biochemistry seminar, 5/13/03
- 136) Massachusetts Institute of Technology, Program in Polymer Science and Technology, Spring 2003 semester interdepartmental seminar series, 4/16/03
- 137) University of California-Santa Barbara Bioengineering Seminar Series, 4/4/03
- 138) Materials Research Society, spring 2003 national meeting, San Francisco, CA, Materials Inspired by Biology symposium, 4/23/2003
- 139) Gordon Conference, Polymers West, speaker Ventura, CA 1/7/2003
- 140) Princeton Materials Institute, Complex Fluids/Materials Interdepartmental Seminar series, 11/18/2002
- 141) American Chemical Society, Division of Polymer Materials Science and Engineering, Fall, 2002 national meeting of the American Chemical Society, Unilever Outstanding Graduate Thesis Award Symposium, 08/18/2002
- 142) University of Delaware, College of Engineering Biomaterials Conference, 2/13/2002
- 143) Massachusetts Institute of Technology, Institute of Biomedical Engineering seminar series, Cambridge, MA 11/30/01
- 144) DARPA/NRL workshop on self-assembly, Arlington, VA, 11/15/2001
- 145) New Jersey Institute of Technology, Chemical Engineering Seminar Series; Newark, NJ 10/8/2001
- 146) Air Force Research Labs, Materials Directorate seminar series; Dayton, OH 8/3/2001
- 147) DuPont Young Faculty Seminar Series; DuPont Central Research & Development, Wilmington, DE 5/14/2001
- 148) U. Alabama-Birmingham, Chemistry Departmental Seminar; Birmingham, AL 2/16/2001
- 149) University of Delaware, Dept. of Physics/Condensed Matter Seminar series, 2/13/2001
- 150) Drexel University, Chemical Engineering Departmental Seminar; Philadelphia, PA, 1/29/2001
- 151) Temple University, Dept. of Chemistry seminar series; Philadelphia, PA 11/16/2000
- 152) SUNY Stony Brook, Materials Science and Engineering Departmental Seminar; Stony Brook, NY 10/27/2000
- 153) Muhlenberg College, Dept. of Chemistry seminar series; Allentown, PA 9/28/2000
- 154) University of Pennsylvania, biophysical engineering, membrane group seminar; Philadelphia, PA 8/24/2000
- 155) American Chemical Society, Colloid and Surface Science Division, American Chemical Society fall national meeting, Washington, D.C., 8/22/2000
- 156) ACS Frontiers for Polymer Science in the 21st Century symposium, Macromolecular Secretariat, American Chemical Society spring national meeting, San Francisco, CA March 26-31, 2000.

Scientific Community Service

Service: External Scientific Community/National and International Scientific Organizations

Conference organization:

- High Polymer Research Group executive committee, United Kingdom, 2013-

- Charged with yearly conference organization
- IUPAC World Polymer Congress, 2012, International Advisory Board
- American Physical Society Program Chair, Division of Polymer Physics, American Physical Society national meeting, 2011, Dallas, TX.
 - Solicited, judged and organized symposia and symposia leaders for invited sessions and focus sessions for national meeting. Organized scheduling of 78 invited talks. Led abstract sorting and room assignments at APS national headquarters-750 abstracts total for division
- Materials Research Society Spring 2010 National Meeting co-chair, 2010
 - Solicited, judged and organized symposia and symposia leaders for soft matter and biomaterials for spring national meeting. Served as judge for MRS best poster awards during nightly poster sessions. Organized plenary sessions.
- IUPAC World Polymer Congress, Macro2010, International Advisory Board
- Gordon Research Conference chair, Macromolecular Materials, January, 2009
 - Invited 22 invited speakers and 22 session chairs for GRC meeting around soft matter and biomaterials topics. Made schedule and raised funds for speaker travel, student and post-doc travel. Also raised funds for the Gordon Research Seminar for graduate students and post-docs, a short meeting preceding the GRC that was organized by graduate students in conjunction with the GRC.
- Faraday Discussion 139 co-Chair “The Importance of Polymer Science for Biological Systems” March 2008, University of York, United Kingdom.
 - With 6 other co-chairs, created speaker list. Invited the U.S. speakers.
- Gordon Conference vice chair, (previously named) Polymers West 2007

Symposium organization:

- **American Chemical Society Symposium organizer, 2013 spring national meeting of the American Chemical Society, New Orleans, LA 4/8/2012, ACS Award in Applied Polymer Science symposium in honor of Professor Mitch Winnik**
 - **solicited invited speakers and prepared schedule, social activities for full day symposium.**
- Materials Research Society Symposium organizer, Q: Functional and Responsive Materials Exploiting Peptide and Protein Self-Assembly, 2012 Fall national meeting of the Materials Research Society, Boston, MA, 11/25-11/30/2012
 - With 3 co-chairs, solicited invited speakers, judged and sorted abstracts for talks and posters for 1.5 day symposium
- Nanotech 2010, Nanobiomaterials chair, June 21-25, Anaheim, CA.
 - Solicited invited speakers, judged and sorted abstracts for 1-day session
- Nanotech 2009, Nanobiomaterials chair, May 3-7, Houston, TX.
 - Solicited invited speakers, judged and sorted abstracts for 1-day session
- Materials Research Society Symposium organizer, Symposium MM: Biomolecular and Biologically Inspired Interfaces and Assemblies, 2007 fall national meeting of the Materials Research Society, Boston, MA, 11/29-12/3
 - With 3 co-chairs, solicited invited speakers, judged and sorted abstracts for talks and posters for 2.5 day symposium
- Materials Research Society Symposium organizer, 2004 fall national meeting of the Materials Research Society, Boston, MA, 11/29-12/3, Neutron and X-ray Scattering as a Probe of Multiscale Phenomena
 - With 2 co-chairs, solicited invited speakers, judged and sorted abstracts for talks and posters for 4 day symposium.

- **American Chemical Society Symposium organizer, 2004 spring national meeting of the American Chemical Society, Anaheim, CA 3/28-4/1, Interface of Polymers and Biomimetics**
 - **With 1 co-chair, solicited invited speakers, judged and sorted abstracts for talks and posters for 4 day symposium**

Other national/international society committee work/agency support:

- NSF Workshop on Biomaterials, Arlington, VA 6/19-6/20/2012
- MRS 2011- , MRS Program Development Subcommittee
 - Committee meets at both fall and spring national meetings, as well as 2-3 teleconferences/year to advise current meeting chairs of symposia quality, novelty and overlap.
- American Physical Society, Division of Polymer Physics, Member at Larger, 2009-2012
- American Physical Society, Division of Polymer Physics, Executive Committee, 2009-2012
 - Two meetings/year to govern the division, judge applications for Dillon award as well as other honors from division.
- American Physical Society, Division of Polymer Physics, Membership Committee, 2008-2012
- **American Chemical Society, Technical Programming Committee, Polymer Materials Science and Engineering Division, 2004-2007 (Chair, 2006-2007)**
 - **Developed topics, recruited symposium organizers for PMSE symposium organization for fall and spring national ACS meetings**
- **American Chemical Society, Executive Committee, Polymer Materials Science and Engineering Division, 2004-2007**
- **Herman F Mark Scholars review committee of the Polymer Division of the American Chemical Society, 2006-2009.**
- National Center for Neutron Research (NCNR) Expansion Workshop, Washington D.C.– July 17-19 2006.
 - Discussed importance of neutron scattering for academic and industrial research. Authored section of final report used by NIST and the NCNR to justify construction of NCNR expansion.
- Publications Committee, Polymer Division, American Physical Society, 2002-2005
 - Guest Editor, APS March meeting special edition of the Journal of Polymer Science, Polymer Physics Edition, 2003.
- **Ford minority travel grant review committee, Polymer Materials Science and Engineering Division, American Chemical Society, 2004-2007.**

Service: External Scientific Community/National Scientific Organizations; Peer Review Process

Associate Editor for North America for Soft Matter, Royal Society of Chemistry, Cambridge, U.K. Solicit reviewers for ~200 papers/year submitted to Soft Matter from North American authors. Make editorial decisions on papers and revisions based on reviews. Attend 1-2 editorial board meetings/year in the United Kingdom/Europe. Current Impact Factor of Soft Matter: 4.5.

Reviewer/Referee for the following scientific journals:

Macromolecules, Biomacromolecules, Soft Matter, Advanced Materials, Journal of the American Chemical Society, Journal of Polymer Science-Polymer Physics, Science, Journal of Chemical Physics, Polymer, Polymer Engineering and Science, Nature Materials, ACS Nano, Langmuir, The European Physical Journal E, Nano Letters, Angewandte Chemie, Journal of Physical Chemistry,

Composites Science and Technology, Macromolecular Rapid Communications, Nature Communications, Macro Communications

Reviewer/Referee for the following institutions/funding agencies:

National Science Foundation (Biomaterials Division of the Division of Materials Research-Career Award panel as well as single PI proposal panels, MRSEC mail reviewer, MRSEC site visit panelist, MRSEC PREM program reverse sight visit panelist, Nanoscale Interdisciplinary Research Team review panel member, Review panelist for SBIR program, RUI grants, individual grant reviewer for Polymer Division of the Materials Directorate, Materials World Network Panel member), National Institutes of Health (National Institute of Biomedical Imaging and Bioengineering *ad hoc* study sections), American Chemical Society Petroleum Research Fund, National Research Council, National Center for Neutron Research, National Institute of Standards and Technology (NG7 Reflectometer beamtime requests, NG3 and NG7 Small-angle neutron scattering beamtime requests), National Synchrotron Light Source, Brookhaven National Laboratory beamtime requests for x-ray (diffraction and reflectometry at beamline X10), Center for Nanophase Materials-Oak Ridge National Laboratory Proposal Review Committee.

Service: College/University Committee work:

- UD College of Engineering Dean's search committee, 2013
- UD College of Engineering Promotion and Tenure Committee, 2009-present (chair 2012-2013)
- UD Library Committee, 2009-present
- UD College of Engineering Strategic Planning Committee, 2008-2009
- UD Nanotechnology Council, 2006-2008
- Electron Microscopy Laboratory oversight committee 1999-present

Current and past student researchers in the Pochan group

Graduate Students Currently Advised

Sameer Sathaye, 5th year, Ph.D. candidate
Yingchao Chen, 4th year, Ph.D. candidate
Jessie Sun, 3rd year, projected Ph.D. candidate
Michael Haider, 1st year, projected Ph.D. candidate
Peter Worthington, 1st year, projected Ph.D. candidate
Brandon Stewart, undergraduate researcher

Past Post-Doctoral Researchers:

Hassna Ramay, Ph.D. University of Washington, faculty member at Lahore University of Management and Science, Pakistan
Zhibin Li, Ph.D. University of Tennessee, currently a permanent research staff member at Boehringer-Ingelheim Pharmaceuticals
Sean Ryan, M.D., surgical resident, Christiana Hospital

Recent graduates:

Jiahua Zhu, Ph.D.
Congqi Yan, Ph.D. Tate and Lyle, Chicago, IL.

Aysegul Altunbas, Ph.D., Digital Optics, CA.
Sheng Zhong, Ph.D., GE Global Research, Niskayuna, NY
Nikhil Sharma, Ph.D., Intel, Chandler, AZ
Rohan Hule, Ph.D., RTI International in Research Triangle Park, N.C.
Tuna Yucel, Ph.D., Post-doctoral researcher, Tufts University
Kelly Hales, Ph.D., Avon central research and development, Suffern, NY
Matthew Lamm, Ph.D., Merck central research and development, Summit, NJ
Lisa Pakstis, Ph.D., National Research Council Post-doctoral researcher at NIST, currently at Synthes
Biomaterials, West Chester, PA
Bulent Ozbas, Ph.D., Post-doctoral researcher at Princeton, currently at Air Products, Allentown, PA
Vahik Krikorian, Ph.D., Post-doctoral researcher at MIT, currently at Kerr Corporation
Honggang Cui, Ph.D., Post-doctoral researcher, Northwestern University, currently Assistant Professor of
Chemical Engineering at Johns Hopkins University
Elizabeth Minich, Masters of Engineering, Icon Clinical Research, North Wales, PA
Zheng Zhen, Masters of Engineering