

## **Marc Andrew Hillmyer**

*McKnight Presidential Endowed Chair, University of Minnesota*

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### **EDUCATION**

Ph.D. Chemistry, California Institute of Technology 1994  
B.S. Chemistry, University of Florida 1989

### **APPOINTMENTS**

College of Science and Engineering – University of Minnesota  
Director, Center for Sustainable Polymers 2009–present

Department of Chemistry – University of Minnesota  
McKnight Presidential Endowed Chair 2015–present  
Distinguished University Teaching Professor 2014–present  
Distinguished McKnight University Professor 2010–present  
Professor 2009–2010  
Elmore H. Northey Associate Professor, Professor 2004–2007, 2007–2009  
Associate Professor 2002–2004  
Assistant Professor 1997–2002

Department of Chemical Engineering and Materials Science – University of Minnesota  
Graduate Faculty Member 1999–present  
Postdoctoral Research Associate 1994–1997

### **HONORS**

Entrepreneurial Researcher Award (UMN) 2017  
McKnight Presidential Endowed Chair (UMN) 2015  
NSF Division of Materials Research, Special Creativity Extension 2014–2016  
Postbaccalaureate, Graduate, and Professional Education Award (UMN) 2014  
PTN Medema Award 2013  
LE STUDIUM research fellow, Université d'Orléans/CNRS 2012–2013  
Fellow of the Polymer Chemistry (POLY) Division of the ACS 2012  
Carl S. Marvel Creative Polymer Chemistry Award (POLY division of the ACS) 2011  
Distinguished McKnight University Professorship (UMN) 2010  
IonE Fellow (UMN) 2010  
George W. Taylor/IT Alumni Society Award for Distinguished Teaching (UMN) 2010  
Fellow of the American Association for the Advancement of Science (AAAS) 2009  
Visiting Professor, Université d'Orléans, France 2008  
Arthur K. Doolittle Award (jointly awarded, PMSE division of the ACS) 2007  
George Taylor Distinguished Research Award (UMN) 2007  
Leverhulme Visiting Professor, University of Cambridge 2005–2006  
Best Chemistry Instructor Award (UMN Institute of Technology Student Board) 2005  
Elmore H. Northey Professorship (UMN) 2004–2009  
George Taylor Career Development Award (UMN) 2002  
National Science Foundation CAREER Award 2001–2005  
Packard Fellowship for Science and Engineering 2000–2005  
Schlumberger Limited Foundation Award 2000, 2001  
Camille Dreyfus Teacher-Scholar Award 2000–2005  
McKnight Land-Grant Professorship (UMN) 2000–2002  
DuPont Young Professor Grant 1999–2001  
Research Corporation Research Innovation Award 1998–2001  
3M Company Non-tenured Faculty Award 1998–2002  
IBM Graduate Research Fellowship 1992  
American Institute of Chemists Student Award 1989  
President's Recognition Award (UF); College Scholar Award (UF); Summerville Fellowship in Chemistry (UF) 1989

**PROFESSIONAL SERVICE**

Editor-in-Chief for the ACS journal <i>Macromolecules</i>	2018-present
Co-organizer of "Porous Polymers 2016" an ACS symposium	2016
Co-organizer for "Sustainable Polymers" an ACS workshop	2016
<i>Chair, Chair Elect, Vice Chair</i> – ACS Division of Polymer Chemistry	2017, 2016, 2015
Chair, Vice Chair – Polymers Gordon Conference	2015, 2013
Scientific Committee for a symposium at the E-MRS 2015 Spring Meeting	2015
Co-organizer of "Sustainable Resources and Renewable Resources" at 14 <sup>th</sup> Pacific Polymer Conf.	2015
Co-organizer of "Porous Polymers 2014" an ACS symposium	2014
Co-organizer of "Sustainable Polymers, Processes and Product Applications" an ACS symposium	2014
ACS Division of Polymer Chemistry Awards Committee co-chair	2011–2014
Co-organizer for "Sustainable Polymers" an ACS workshop	2013
Presidential Green Chemistry Award Challenge selection panel	2012
International Advisory Committee MACRO 2012 - IUPAC World Polymer Congress	2012
Co-organizer of "Next-Generation Renewable Polymers" an ACS symposium	2012
Steering Committee - Minnesota Green Chemistry Forum	2010–2012
Scientific Committee for 19th Annual BioEnvironmental Polymer Society Meeting	2011
Participant in Chemical Sciences and Society Symposia (CS3) meeting on "Sustainable Materials"	2010
Co-organizer of "Functional Block Copolymer Assemblies" a PacifiChem symposium	2010
Co-organizer of "Porous Polymers" an ACS symposium	2009
Associate Editor for the ACS journal <i>Macromolecules</i>	2008–2017
Co-editor for "Biorenewable Polymers" special issue of <i>Polymer Reviews</i>	2007
Co-organizer of "Polymers from Renewable Resources" an ACS Symposium	2007
Editorial Advisory Board <i>Macromolecular Chemistry and Physics</i>	2007–2010
Co-organizer of "Multicompartment Micelles" an ACS Symposium	2006
International Advisory Committee for the RSC conference <i>Materials Chemistry 8</i>	2006–2007
Editorial Advisory Board for <i>Polymer</i>	2005–2009
Los Alamos National Lab Center for Integrated Nanotechnologies proposal review panel	2005–2007
Editorial Advisory Board <i>Polymer Reviews</i>	2005–2010
Editorial Advisory Board for the ACS journal <i>Macromolecules</i>	2004–2006
Co-organizer of "Polymer Chemistry for Physicists" short course, APS Meeting	2003
Co-editor for "Materials for the 21st Century Special Issue" for <i>J. Phys. Org. Chem.</i>	2000
Co-organizer "Macromolecular Synthesis by Selective Chemical Modification" an ACS Symposium	2000
ACS Division of Polymer Chemistry co-rep. to the ACS Macromolecular Secretariat	1998–2007

## SELECTED INVITED LECTURES

Xingda Lecture - Peking University College of Chemistry and Molecular Eng. – Peking, China	January 2019
Inaugural Distinguished Lecturer - University of Waterloo, Inst. Polymer Research – Waterloo, Canada	May 2018
Aldrich Lecture - UC Berkeley, Department of Chemistry – Berkeley, California	January 2017
Plenary Lecture Intl. Conf. on Polymer Sci. & Tech. (MACRO2017) – Thiruvananthapuram, India	January 2017
Plenary Lecture - Warwick Polymers 2016 – Warwick, England	July 2016
Plenary Lecture - 8 <sup>th</sup> Annual Triangle Soft Matter Workshop – Durham, North Carolina	May 2016
Plenary Lecture - 1 <sup>st</sup> Annual Green Materials Symposium – London, England	December 2015
Whitby Memorial Lectureship - University of Akron, Dept. of Polymer Sci. – Akron, Ohio	May 2015
CSE Public Lecture – UMN College of Science and Engineering – Minneapolis, Minnesota	January 2015
Dow Lecture in Sustainability - Colorado St. Univ., Dept. of Chem. – Ft. Collins, Colorado	October 2014
Xerox Lecture - Univ. of British Columbia, Dept. of Chemistry – Vancouver, Canada	September 2014
Keynote Lecture - Canadian High Polymer Forum – Gananoque, Canada	July 2014
Bayer Lecture - Cornell University, Dept. of Chemistry & Chemical Biology – Ithaca, NY	November 2013
Aldrich Lecture - Columbia University, Department of Chemistry – New York, NY	October 2013
Plenary Lecture - 2013 Dutch Polymer Days Conference – Lunteren, The Netherlands	March 2013
Plenary Lecture - Warwick 2012 – Warwick, England	July 2012
Grande Conférence IUPAC - Université de Montréal, Dept. of Chem.– Montreal, Canada	March 2012
Keynote Lecture - 2011 Australasian Polymer Symposium – Coffs Harbour, Australia	February 2011
Plenary Lecture - Int. Symp. on Nano Structured Polymeric Materials – Pohang, Korea	November 2010
Plenary Lecture - Virginia Tech Technical Conference and Review – Blacksburg, Virginia	October 2010
Plenary Lecture - 9 <sup>th</sup> National Graduate Research Polymer Conference – Chapel Hill, NC	June 2010

## PEER-REVIEWED PUBLICATIONS

- (362) Ting, J. M.; Ricarte, R. G.; Schneiderman, D. K.; Saba, S. A.; Jiang, Y.; Hillmyer, M. A.; Bates, F. S.; Reineke, T. M.; Macosko, C. M.; Lodge, T. P. – “Polymer Day: Outreach Experiments for High School Students” – *J. Chem. Educ.* **2017**, *94*, 1629–1638. [10.1021/acs.jchemed.6b00767](https://doi.org/10.1021/acs.jchemed.6b00767)
- (361) Saba, S. A.; Lee, B.; Hillmyer, M. A. – Tricontinuous Nanostructured Polymers via Polymerization-Induced Microphase Separation – *ACS Macro Lett.* **2017**, *6*, 1232–1236. [10.1021/acsmacrolett.7b00677](https://doi.org/10.1021/acsmacrolett.7b00677)
- (360) Vidil, T.; Hampu, N. – Nanoporous Thermosets with Percolating Pores from Block Polymers Chemically Fixed above the Order–Disorder Transition – *ACS Cent. Sci.* **2017**, *3*, 1114–1120. [10.1021/acscentsci.7b00358](https://doi.org/10.1021/acscentsci.7b00358)
- (359) Chopade, S. A.; Anderson, E. L.; Schmidt, P. W.; Lodge, T. P.; Hillmyer, M. A.; Bühlmann, P. – Self-Supporting, Hydrophobic, Ionic Liquid-Based Reference Electrodes Prepared by Polymerization-Induced Microphase Separation – *ACS Sens.* **2017**, *2*, 1498–1504. [10.1021/acssensors.7b00512](https://doi.org/10.1021/acssensors.7b00512)
- (358) Wilbon, P.; Swartz, J. L.; Meltzer, N. R.; Brutman, J. P.; Hillmyer, M. A.; Wissinger, J. E. – Degradable Thermosets Derived from an Isosorbide/Succinic Anhydride Monomer and Glycerol – *ACS Sustainable Chem. Eng.* **2017**, *5*, 9185–9190. [10.1021/acssuschemeng.7b02096](https://doi.org/10.1021/acssuschemeng.7b02096)
- (357) John, A.; Dereli, B.; Ortuño, M. A.; Johnson, H. E.; Hillmyer, M. A.; Cramer, C. J.; Tolman, W. B. – Selective Decarbonylation of Fatty Acid Esters to Linear  $\alpha$ -Olefins – *Organometallics* **2017**, *36*, 2956–2964. [10.1021/acs.organomet.7b00411](https://doi.org/10.1021/acs.organomet.7b00411)
- (356) Kennemur, J. G.; Bates, F. S.; Hillmyer, M. A. – Revisiting the Anionic Polymerization of Methyl Ethacrylate – *Macromol. Chem. Phys.* **2017**, 1700282. [10.1002/macp.201700282](https://doi.org/10.1002/macp.201700282)
- (355) Park, J.; Saba, S. A.; Hillmyer, M. A.; Kang, D.-C.; Seo, M. – Effect of homopolymer in polymerization-induced microphase separation process – *Polymer* **2017**, *126*, 338–351. [10.1016/j.polymer.2017.04.046](https://doi.org/10.1016/j.polymer.2017.04.046)
- (354) Onbulak, S.; Wang, Y.; Brutman, J. P.; Hillmyer, M. A. – Synthesis and Utility of Ethylene (Meth)Acrylate Copolymers Prepared by a Tandem Ring-Opening Polymerization Hydrogenation Strategy – *J. Polym. Sci. Polym. Chem.* **2017**, *55*, 3117–3126. [10.1002/pola.28686](https://doi.org/10.1002/pola.28686)
- (353) Fortman, D. J.; Brutman, J. P.; Hillmyer, M. A.; Dichtel, W. R. – Structural effects on the reprocessability and stress relaxation of cross-linked polyhydroxyurethanes – *J. Appl. Polym. Sci.* **2017**, 44984. [10.1002/APP.44984](https://doi.org/10.1002/APP.44984)
- (352) Radlauer, M.; Fukuta, S.; Matta, M. E.; Hillmyer, M. A. – Controlled synthesis of ABCA' tetrablock terpolymers – *Polymer* **2017**, *124*, 60–67. [10.1016/j.polymer.2017.07.025](https://doi.org/10.1016/j.polymer.2017.07.025)
- (351) Wang, Y.; Hillmyer, M. A. – Oxidatively Stable Polyolefin Thermoplastics and Elastomers for Biomedical Applications – *ACS Macro Lett.* **2017**, *6*, 613–618. [10.1021/acsmacrolett.7b00277](https://doi.org/10.1021/acsmacrolett.7b00277)
- (350) Larsen, M. B.; Van Horn, J. D.; Wu, F.; Hillmyer, M. A. – Intrinsically Hierarchical Nanoporous Polymers via Polymerization-Induced Microphase Separation – *Macromolecules* **2017**, *50*, 4363–4371. [10.1021/acs.macromol.7b00808](https://doi.org/10.1021/acs.macromol.7b00808)
- (349) Schulze, M. W.; Lewis III, R. M.; Lettow, J. H.; Hickey, R. J.; Gillard, T. M.; Hillmyer, M. A.; Bates, F. S. – Conformational Asymmetry and Quasicrystal Approximants in Linear Diblock Copolymers – *Phys. Rev. Lett.* **2017**, *118*, 207801. [10.1103/PhysRevLett.118.207801](https://doi.org/10.1103/PhysRevLett.118.207801)
- (348) Kim, K.; Schulze, M. W.; Arora, A.; Lewis III, R. M.; Hillmyer, M. A.; Dorfmann, K. D.; Bates, F. S. – Thermal processing of diblock copolymer melts mimics metallurgy – *Science* **2017**, *356*, 520–523. [10.1126/science.aam7212](https://doi.org/10.1126/science.aam7212)
- (347) Watts, A.; Kurokawa, N.; Hillmyer, M. A. – Strong, Resilient, and Sustainable Aliphatic Polyester Thermoplastic Elastomers – *Biomacromolecules* **2017**, *18*, 1845–1854. [10.1021/acs.biomac.7b00283](https://doi.org/10.1021/acs.biomac.7b00283)
- (346) Schneiderman, D. K.; Hillmyer, M. A. – 50th Anniversary Perspective: There Is a Great Future in Sustainable Polymers – *Macromolecules* **2017**, *50*, 3733–3749. [10.1021/acs.macromol.7b00293](https://doi.org/10.1021/acs.macromol.7b00293)
- (345) Chopade, S. A.; Au, J. G.; Li, Z.; Schmidt, P. W.; Hillmyer, M. A.; Lodge, T. P. – Robust Polymer Electrolyte Membranes with High Ambient-Temperature Lithium-Ion Conductivity via Polymerization-Induced Microphase Separation – *ACS Appl. Mater. Interfaces* **2017**, *9*, 14561–14565. [10.1021/acsami.7b02514](https://doi.org/10.1021/acsami.7b02514)

- (344) Ricarte, R. G.; Li, Z.; Johnson, L. M.; Ting, J. M.; Reineke, T. M.; Bates, F. S.; Hillmyer, M. A.; Lodge, T. P. Direct Observation of Nanostructures during Aqueous Dissolution of Polymer/Drug Particles – *Macromolecules* **2017**, *50*, 3143–3152. [10.1021/acs.macromol.7b00372](https://doi.org/10.1021/acs.macromol.7b00372)
- (343) Li, Z.; Johnson, L. M.; Ricarte, R. G.; Yao, L. J.; Hillmyer, M. A.; Bates, F. S.; Lodge, T. P. – Enhanced Performance of Blended Polymer Excipients in Delivering a Hydrophobic Drug through the Synergistic Action of Micelles and HPMCAS – *Langmuir* **2017**, *33*, 2837–2848. [10.1021/acs.langmuir.7b00325](https://doi.org/10.1021/acs.langmuir.7b00325)
- (342) John, A.; Hillmyer, M. A.; Tolman, W. B. – Anhydride-Additive-Free Nickel-Catalyzed Deoxygenation of Carboxylic Acids to Olefins – *Organometallics* **2017**, *36*, 506–509. [10.1021/acs.organomet.6b00940](https://doi.org/10.1021/acs.organomet.6b00940)
- (341) Johnson, L. M.; Li, Z.; LaBelle, A. J.; Bates, F. S.; Lodge, T. P.; Hillmyer, M. A. – Impact of Polymer Excipient Molar Mass and End Groups on Hydrophobic Drug Solubility Enhancement – *Macromolecules* **2017**, *50*, 1102–1112. [10.1021/acs.macromol.6b02474](https://doi.org/10.1021/acs.macromol.6b02474)
- (340) Schulze, M. W.; Hillmyer, M. A. – Tuning Mesoporosity in Cross-Linked Nanostructured Thermosets via Polymerization-Induced Microphase Separation – *Macromolecules* **2017**, *50*, 997–1007. [10.1021/acs.macromol.6b02570](https://doi.org/10.1021/acs.macromol.6b02570)
- (339) Radlauer, M. R.; Sinturel, C.; Asai, Y.; Arora, A.; Bates, F. S.; Dorfman, K. D.; Hillmyer, M. A. – Morphological Consequences of Frustration in ABC Triblock Polymers – *Macromolecules* **2017**, *50*, 446–458. [10.1021/acs.macromol.6b02112](https://doi.org/10.1021/acs.macromol.6b02112)
- (338) Zhang, J.; Schneiderman, D. K.; Li, T.; Hillmyer, M. A.; Bates, F. S. – Design of Graft Block Polymer Thermoplastics – *Macromolecules* **2016**, *49*, 9108–9118. [10.1021/acs.macromol.6b02033](https://doi.org/10.1021/acs.macromol.6b02033)
- (337) Todd, A. D.; McEneaney, R. J.; Topolkarayev, V. A.; Macosko, C. W.; Hillmyer, M. A. – Reactive Compatibilization of Poly(ethylene terephthalate) and High-Density Polyethylene Using Amino-Telechelic Polyethylene – *Macromolecules* **2016**, *49*, 8988–8994. [10.1021/acs.macromol.6b02080](https://doi.org/10.1021/acs.macromol.6b02080)
- (336) Moughton, A. O.; Sagawa, T.; Yin, L.; Lodge, T. P. – Multicompartment Micelles by Aqueous Self-Assembly of  $\mu$ -A(BC)<sub>n</sub> Miktobrush Terpolymers – *ACS Omega* **2016**, *1*, 1027–1033. [10.1021/acsomega.6b00284](https://doi.org/10.1021/acsomega.6b00284) [Correction: [10.1021/acsomega.7b00327](https://doi.org/10.1021/acsomega.7b00327)]
- (335) Neitzel, A. E.; Haversang, T. J.; Hillmyer, M. A. – Organocatalytic Cationic Ring-Opening Polymerization of a Cyclic Hemiacetal Ester – *Ind. Eng. Chem. Res.* **2016**, *55*, 11747–11755. [10.1021/acs.iecr.6b03114](https://doi.org/10.1021/acs.iecr.6b03114)
- (334) Vanderlaan, M. E.; Hillmyer, M. A. – “Uncontrolled” Preparation of Disperse Poly(lactide)-block-poly(styrene)-block-poly(lactide) for Nanopatterning Applications – *Macromolecules* **2016**, *49*, 8031–8040. [10.1021/acs.macromol.6b02014](https://doi.org/10.1021/acs.macromol.6b02014)
- (333) Brutman, J. P.; De Hoe, G. X.; Schneiderman, D. K.; Le, T. N.; Hillmyer, M. A. – Renewable, Degradable, and Chemically Recyclable Cross-Linked Elastomers – *Ind. Eng. Chem. Res.* **2016**, *55*, 11097–11106. [10.1021/acs.iecr.6b02931](https://doi.org/10.1021/acs.iecr.6b02931)
- (332) Radlauer, M. R.; Matta, M. E.; Hillmyer, M. A. – Regioselective cross metathesis for block and heterotelechelic polymer synthesis – *Polym. Chem.* **2016**, *7*, 6269–6278. [10.1039/c6py01231k](https://doi.org/10.1039/c6py01231k)
- (331) Tang, D.; Chen, Z.; Correa-Netto, F.; Macosko, C. W.; Hillmyer, M. A.; Zhang, G. – Poly(Urea Ester): A Family of Biodegradable Polymers with High Melting Temperatures – *J. Polym. Sci. Polym. Chem.* **2016**, *54*, 3795–3799. [10.1002/pola.28355](https://doi.org/10.1002/pola.28355)
- (330) Spanjers, C. S.; Schneiderman, D. K.; Wang, J. Z.; Wang, J.; Hillmyer, M. A.; Zhang, K.; Dauenhauer, P. J. – Branched Diol Monomers from the Sequential Hydrogenation of Renewable Carboxylic Acids – *ChemCat Chem* **2016**, *8*, 3031–3035. DOI: [10.1002/cctc.201600710](https://doi.org/10.1002/cctc.201600710)
- (329) O’Connor, K. S.; Watts, A.; Vaidya, T.; LaPointe, A. M.; Hillmyer, M. A.; Coates, G. W. – Controlled Chain Walking for the Synthesis of Thermoplastic Polyolefin Elastomers: Synthesis, Structure, and Properties – *Macromolecules* **2016**, *49*, 6743–6751. DOI: [10.1021/acs.macromol.6b01567](https://doi.org/10.1021/acs.macromol.6b01567)
- (328) Cheng, C.; Watts, A.; Hillmyer, M. A.; Hartwig, J. F. – Polysilylether: A Degradable Polymer from Biorenewable Feedstocks – *Angew. Chem. Int. Ed.* **2016**, *55*, 11872–11876. DOI: [10.1002/anie.201606282](https://doi.org/10.1002/anie.201606282)