

ANNE J. MCNEIL

PROFESSIONAL EXPERIENCE

Arthur F. Thurnau Professor Department of Chemistry Macromolecular Science and Engineering Program University of Michigan , Ann Arbor, MI	2016–present
Arthur F. Thurnau Associate Professor Department of Chemistry Macromolecular Science and Engineering Program University of Michigan , Ann Arbor, MI	2013–2016
Seyhan N. Ege Assistant Professor Department of Chemistry Macromolecular Science and Engineering Program University of Michigan , Ann Arbor, MI	2007–2013

EDUCATION

L'Oreal Postdoctoral Fellow Massachusetts Institute of Technology , Cambridge, MA Advisor: Professor Timothy M. Swager	2005–2007
Ph.D. in Chemistry Cornell University , Ithaca, NY Advisor: Professor David B. Collum	1999–2005
B.S. in Chemistry, <i>summa cum laude</i> College of William and Mary , Williamsburg, VA Advisor: Professor Robert J. Hinkle	1995–1999

AWARDS

AAAS Fellow	2017
Faculty Recognition Award	2016
Howard Hughes Medical Institute Professor	2014
Provost's Teaching Innovation Prize	2014
Arthur F. Thurnau Professorship	2014
Class of 1923 Memorial Teaching Award	2013
Camille and Henry Dreyfus Foundation Teacher-Scholar Award	2012
Alfred P. Sloan Research Fellow	2011
LSA Excellence in Education Award	2011
Army Research Office – Presidential Early Career Award in Science and Engineering	2010
NSF CAREER Award	2010
Office of Naval Research – Young Investigator Award	2009
Arnold and Mabel Beckman Young Investigator Award	2009

Thieme Journal Award, *Synthesis* and *Synlett*
3M Nontenured Faculty Research Award
Seyhan N. Ege Junior Faculty Award

2009
2009/2010/2011
2009

RESEARCH PUBLICATIONS (AT MICHIGAN)

47. Leone, A. K.; Mueller, E. A.; McNeil, A. J. The History of Palladium-Catalyzed Cross-Couplings Should Inspire the Future of Catalyst-Transfer Polymerization. *J. Am. Chem. Soc.* **2018**, *140*, 15126–15139. DOI: [10.1021/jacs.8b09103](https://doi.org/10.1021/jacs.8b09103) (invited)
46. Lutz, J. P.; Hannigan, M. D.; McNeil, A. J. Polymers Synthesized via Catalyst-Transfer Polymerization and their Applications. *Coord. Chem. Rev.* **2018**, *376*, 225–247. DOI: [10.1016/j.ccr.2018.07.015](https://doi.org/10.1016/j.ccr.2018.07.015) (invited)
45. Leone, A. K.; Goldberg, P. K.; McNeil, A. J. Ring-walking in Catalyst-Transfer Polymerization. *J. Am. Chem. Soc.* **2018**, *140*, 7846–7850. DOI: [10.1021/jacs.8b02469](https://doi.org/10.1021/jacs.8b02469)
44. Vitek, A. K.; Leone, A. K.; McNeil, A. J.; Zimmerman, P. M. Spin-switching transmetalation at Ni diimine catalysts. *ACS Catal.* **2018**, *8*, 3655–3666. DOI: [10.1021/acscatal.7b03974](https://doi.org/10.1021/acscatal.7b03974)
43. Dong, B.X.; Smith, M. L.; Strzalka, J.; Li, H.; McNeil, A. J.; Stein, G. E.; Green, P. F. Molecular weight dependent structure and charge transport in MAPLE-deposited poly(3-hexylthiophene) thin films. *J. Polym. Sci. Part B.: Polym. Phys.* **2018**, *56*, 652–663. DOI: [10.1002/polb.24588](https://doi.org/10.1002/polb.24588)
42. Souther, K. D.; Leone, A. K.; Vitek, A. K.; Palermo, E. F.; LaPointe, A. M.; Coates, G. W.; Zimmerman, P. M.; McNeil, A. J. Trials and tribulations of designing multitasking catalysts for olefin/thiophene block copolymerizations. *J. Polym. Sci., Part A: Polym. Chem.* **2018**, *56*, 132–137. DOI: [10.1002/pola.28885](https://doi.org/10.1002/pola.28885)
41. Hall, A. O.; Lee, S. R.; Bloom, J. W. G.; Bootsma, A. N.; Wheeler, S. E.; McNeil, A. J. Reactive Ligand Influence on Initiation in Phenylene Catalyst-Transfer Polymerization. *J. Polym. Sci., Part A: Polym. Chem.* **2018**, *55*, 1530–1535. DOI: [10.1002/pola.28519](https://doi.org/10.1002/pola.28519)
40. Leone, A. K.; Souther, K. D.; Vitek, A. K.; LaPointe, A. M.; Coates, G. W.; Zimmerman, P. M.; McNeil, A. J. Mechanistic Insight into Thiophene Catalyst-Transfer Polymerization Mediated by Nickel Diimine Catalysts. *Macromolecules* **2017**, *50*, 9121–9127. DOI: [10.1021/acs.macromol.7b02271](https://doi.org/10.1021/acs.macromol.7b02271)
39. Leone, A. K.; McNeil, A. J. Matchmaking in Catalyst-Transfer Polycondensation: Optimizing Catalysts based on Mechanistic Insight. *Acc. Chem. Res.* **2016**, *49*, 2822–2831. DOI: [10.1021/acs.accounts.6b00488](https://doi.org/10.1021/acs.accounts.6b00488)
38. Smith, M. L.; Leone, A. K.; Zimmerman, P. M.; McNeil, A. J. Impact of Preferential π -Binding in Catalyst-Transfer Polycondensation of Thiazole Derivatives. *ACS Macro Lett.* **2016**, *5*, 1411–1415. DOI: [10.1021/acsmacrolett.6b00886](https://doi.org/10.1021/acsmacrolett.6b00886)
37. Li, Y.; Flener Lovitt, C.; McNeil, A. J.; Shuyler, K. Improving Information Literacy through Wikipedia Editing in the Chemistry Classroom: Lessons Learned. In *Integrating Information Literacy into the Chemistry Curriculum*; Flener Lovitt, C., Shuyler, K., Li, Y., Eds.; ACS Symposium Series 1232; American Chemical Society: Washington, DC, 2016; pp 247–264.

36. Zhao, Y.; Nett, A. J.; McNeil, A. J.; Zimmerman, P. M. Computational Mechanism for Initiation and Growth of Poly(3-hexylthiophene) Using Palladium N-Heterocyclic Carbene Precatalysts. *Macromolecules* **2016**, *49*, 7632–7641. DOI: [10.1021/acs.macromol.6b01648](https://doi.org/10.1021/acs.macromol.6b01648)
35. Zurcher, D. M.; Phadke, S.; Coppola, B. P.; McNeil, A. J. Using Student-Generated Instructional Materials to Customize an Online e-Homework Platform. *J. Chem. Educ.* **2016**, *93*, 1871–1878. DOI: [10.1021/acs.jchemed.6b00384](https://doi.org/10.1021/acs.jchemed.6b00384)
34. Veits, G. K.; Carter, K. K.; Cox, S. J. (undergraduate); McNeil, A. J. Developing a gel-based sensor using crystal morphology prediction. *J. Am. Chem. Soc.* **2016**, *138*, 12228–12233. DOI: [10.1021/jacs.6b06269](https://doi.org/10.1021/jacs.6b06269)
33. McNeil, A. J. My Maize and Blue Brick Road to Physical Organic Chemistry. *Beilstein J. Org. Chem.* **2016**, *12*, 229–238. DOI: [10.3762/bjoc.12.24](https://doi.org/10.3762/bjoc.12.24)
32. Bryan, Z. J.; Hall, A. O.; Zhao, C. T. (undergraduate); Chen, J.; McNeil, A. J. Limitations of Using Small Molecules to Identify Catalyst-transfer Polycondensation Reactions. *ACS Macro Lett.* **2016**, *5*, 69–72. DOI: [10.1021/acsmacrolett.5b00746](https://doi.org/10.1021/acsmacrolett.5b00746)
31. Amonoo, J. A.; Li, A.; Purdum, G. E.; Sykes, M. E.; Huang, B.; Palermo, E. F.; McNeil, A. J.; Shtein, M.; Loo, Y.-L.; Green, P. F. An All-Conjugated Gradient Copolymer Approach for Morphological Control of Polymer Solar Cells. *J. Mater. Chem. A* **2015**, *3*, 20174–20184. DOI: [10.1039/C5TA04752H](https://doi.org/10.1039/C5TA04752H)
30. Xiao, M.; Zhang, X.; Bryan, Z. J.; Jasensky, J.; McNeil, A. J.; Chen, Z. Effect of Solvent on Surface Ordering of Poly(3-hexylthiophene) Thin Films. *Langmuir* **2015**, *31*, 5050–5056. DOI: [10.1021/la504872z](https://doi.org/10.1021/la504872z)
29. Zurcher, D. M.; McNeil, A. J. Tools for Identifying New Gelator Scaffolds and Solvents. *J. Org. Chem.* **2015**, *80*, 2473–2478. (invited)
28. Palermo, E. F.; McNeil, A. J. Gradient Sequence π -Conjugated Copolymers. In *Sequence-Controlled Polymers: Synthesis, Self-Assembly, and Properties*; Lutz, J.-F., Meyer, T. Y., Ouchi, M., Sawamoto, M., Eds.; ACS Symposium Series 1170; American Chemical Society: Washington, DC, 2014; pp 287–299.
27. Zurcher, D. M.; Adhia, Y. J.; Díaz Romero, J. (undergraduate); McNeil, A. J. Modifying a Known Gelator Scaffold for Nitrite Detection. *Chem. Commun.* **2014**, *50*, 7813–7816.
26. Li, A.; Amonoo, J.; Huang, B.; Goldberg, P. K.; McNeil, A. J.; Green, P. F. Enhancing photovoltaic performance using an all-conjugated random copolymer to tailor bulk and interfacial morphology of the P3HT:ICBA active layer. *Adv. Funct. Mater.* **2014**, *24*, 5594–5602.
25. Berto, T.; Xu, N.; Lee, S. R.; McNeil, A. J.; Alp, E.; Zhao, J.; Richter-Addo, G.; Lehnert, N. Characterization of the Bridged Hyponitrite Complex $\{[\text{Fe}(\text{OEP})]_2(\mu\text{-N}_2\text{O}_2)\}$: Reactivity of Hyponitrite Complexes and Biological Relevance. *Inorg. Chem.* **2014**, *53*, 6398–6414.

24. Carter, K. K.; Rycenga, H. B. (undergraduate); McNeil, A. J. Improving Hg-triggered Gelation via Structural Modifications. *Langmuir* **2014**, *30*, 3522–3527.
23. Palermo, E. F.; Darling, S. B.; McNeil, A. J. π -Conjugated Gradient Copolymers Suppress Phase Separation and Improve Stability in Bulk Heterojunction Solar Cells. *J. Mater. Chem. C* **2014**, *2*, 3401–3406. DOI: [10.1039/C3TC32512A](https://doi.org/10.1039/C3TC32512A)
22. Bremmer, S. C.; McNeil, A. J.; Soellner, M. B. Enzyme-triggered Gelation: Targeting Proteases with Internal Cleavage Sites. *Chem. Commun.* **2014**, *50*, 1691–1693.
21. Bryan, Z. J.; McNeil, A. J. Conjugated Polymer Synthesis via Catalyst-transfer Polycondensation (CTP): Mechanism, Scope and Applications. *Macromolecules* **2013**, *46*, 8395–8405. (Invited Perspective) DOI: [10.1021/ma401314x](https://doi.org/10.1021/ma401314x)
20. Palermo, E. F.; van der Laan, H. L. (undergraduate); McNeil, A. J. Impact of π -Conjugated Gradient Sequence Copolymers on Polymer Blend Morphology. *Polym. Chem.* **2013**, *4*, 4606–4611.
19. Bryan, Z. J.; McNeil, A. J. Evidence for a Preferential Intramolecular Oxidative Addition in Ni-catalyzed Cross-coupling Reactions and their Impact on Chain-growth Polymerizations. *Chem. Sci.* **2013**, *4*, 1620–1624.
18. Lee, S. R.; McNeil, A. J. Accelerating Ni(II) Precatalyst Initiation using Reactive Ligands and its Impact on Chain-growth Polymerizations. *Dalton Trans.* **2013**, *42*, 4218–4222.
17. Palermo, E. F.; McNeil, A. J. Impact of Copolymer Sequence on Solid-state Properties for Random, Gradient, and Block Copolymers containing Thiophene and Selenophene. *Macromolecules* **2012**, *45*, 5948–5955.
16. Chen, J.; Wu, W. (undergraduate); McNeil, A. J. Detecting a Peroxide-based Explosive via Molecular Gelation. *Chem. Commun.* **2012**, *48*, 7310–7312.
15. Bremmer, S. C.; Chen, J.; McNeil, A. J.; Soellner, M. B. A General Method for Detecting Protease Activity via Gelation and its Application to Artificial Clotting. *Chem. Commun.* **2012**, *48*, 5482–5484.
14. Bryan, Z. J.; Smith, M. L.; McNeil, A. J. Chain-growth Polymerization of Aryl Grignards Initiated by a Stabilized NHC-Pd Precatalyst. *Macromol. Rapid Commun.* **2012**, *33*, 842–847.
 - Highlighted on *MaterialsView* on April 12, 2012.
 - Highlighted on *MaterialsView* on May 11, 2012.
13. Lee, S. R.; Bryan, Z. J.; Wagner, A. M.; McNeil, A. J. Effect of Ligand Electronic Properties on Precatalyst Initiation and Propagation in Ni-catalyzed Cross-coupling Polymerizations. *Chem. Sci.* **2012**, *3*, 1562–1566.
12. McNeil, A. J.; Lanni, E. L. New Conjugated Polymers and Synthetic Methods. In *Synthesis of Polymers*; Schlüter, D. A., Hawker, C. J., Sakamoto, J., Eds; Wiley-VCH: Germany, 2012; Vol 1, pp 475–486.

11. Adhia, Y. J.; Schloemer, T. H. (undergraduate); Perez, M. T. (undergraduate); McNeil, A. J. Using Polymeric Additives to Enhance Molecular Gelation: Impact of Poly(acrylic acid) on Pyridine-based Gelators. *Soft Matter* **2012**, *8*, 430–434.
10. Muro-Small, M. L.; Chen, J.; McNeil, A. J. Dissolution Parameters Reveal Role of Structure and Solvent in Molecular Gelation. *Langmuir* **2011**, *27*, 13248–13253.
9. Moy, C. L.; Kaliappan, R.; McNeil, A. J. Aryl Trihydroxyborate Salts: Thermally Unstable Species with Unusual Gelation Abilities. *J. Org. Chem.* **2011**, *76*, 8501–8507.
8. Lanni, E. L.; Locke, J. R.; Gleave, C. M. (undergraduate); McNeil, A. J. Ligand-based Steric Effects in Ni-catalyzed Chain-growth Polymerizations using Bis(dialkylphosphino)ethanes. *Macromolecules* **2011**, *44*, 5136–5145.
7. Locke, J. R.; McNeil, A. J. Syntheses of Gradient π -Conjugated Copolymers of Thiophene. *Macromolecules* **2010**, *43*, 8709–8710.
6. Lanni, E. L.; McNeil, A. J. Evidence for Ligand-Dependent Mechanistic Changes in Ni-catalyzed Chain-growth Polymerizations. *Macromolecules* **2010**, *43*, 8039–8044.
5. Moy, C. L.; Locke, J. R.; Coppola, B. P.; McNeil, A. J. Improving Science Education and Understanding through Editing Wikipedia. *J. Chem. Educ.* **2010**, *87*, 1159–1162.
 - Highlighted in *Science*: **2010**, *330*, 891.
4. Chen, J.; Kampf, J. W.; McNeil, A. J. Comparing Molecular Gelators and Nongelators based on Solubilities and Solid-state Interactions. *Langmuir* **2010**, *26*, 13076–13080.
3. King, K. N.; McNeil, A. J. Streamlined Approach to a New Gelator: Inspiration from Solid-state Interactions for a Mercury-Induced Gelation. *Chem. Commun.* **2010**, *46*, 3511–3513.
2. Lanni, E. L.; McNeil, A. J. Mechanistic Studies on Ni(dppe)Cl₂-catalyzed Chain-growth Polymerizations: Evidence for Rate-Determining Reductive Elimination. *J. Am. Chem. Soc.* **2009**, *131*, 16573–16579.
1. Chen, J.; McNeil, A. J. Analyte-Triggered Gelation: Initiating Self-Assembly via Oxidation-Induced Planarization. *J. Am. Chem. Soc.* **2008**, *130*, 16496–16497.
 - Highlighted in *Chemical and Engineering News*: **2009**, *87*(13), 28.
 - Highlighted in *Chemistry World*: **2009**, *6*(5), 8.

RESEARCH PUBLICATIONS (BEFORE MICHIGAN)

11. Wheeler, S. E.; McNeil, A. J.; Müller, P.; Swager, T. M.; Houk, K. N. Probing Substituent Effects in Aryl-Aryl Interactions Using Stereoselective Diels-Alder Cycloadditions. *J. Am. Chem. Soc.* **2010**, *132*, 3304–3311.
10. Liou, L. R.; McNeil, A. J.; Toombes, G. E. S.; Collum, D. B. Structures of β -Amino Ester Enolates: New Strategies using the Method of Continuous Variation. *J. Am. Chem. Soc.* **2008**, *130*, 17334–17341.

9. Gruver, J. M.; Liou, L. R.; McNeil, A. J.; Ramírez, A.; Collum, D. B. Solution Structures of Lithium Enolates, Phenolates, Carboxylates, and Alkoxides in the Presence of *N,N,N,N*-Tetramethylethylenediamine: A Prevalence of Cyclic Dimers. *J. Org. Chem.* **2008**, *73*, 7743–7747.
8. Liou, L. R.; McNeil, A. J.; Ramírez, A.; Toombes, G. E. S.; Gruver, J. M.; Collum, D. B. Lithium Enolates of Simple Ketones: Structure Determination Using the Method of Continuous Variation. *J. Am. Chem. Soc.* **2008**, *130*, 4859–4868.
7. Collum, D. B.; McNeil, A. J.; Ramírez, A. Lithium Diisopropylamide: Solution Kinetics and Implications for Organic Synthesis. *Angew. Chem. Int. Ed.* **2007**, *46*, 3002–3017.
6. McNeil, A. J.; Müller, P.; Whitten, J. E.; Swager, T. M. Conjugated Polymers in an Arene Sandwich. *J. Am. Chem. Soc.* **2006**, *128*, 12426–12427.
5. McNeil, A. J.; Collum, D. B. Reversible Enolization of β -Amino Carboxamides by Lithium Hexamethyldisilazide. *J. Am. Chem. Soc.* **2005**, *127*, 5655–5661.
4. McNeil, A. J.; Toombes, G. E. S.; Gruner, S. M.; Lobkovsky, E.; Collum, D. B.; Chandramouli, S. V.; Vanasse, B. J.; Ayers, T. A. Diastereoselective Alkylation of β -Amino Esters: Structural and Rate Studies Reveal Alkylations of Hexameric Lithium Enolates. *J. Am. Chem. Soc.* **2004**, *126*, 16559–16568.
3. McNeil, A. J.; Toombes, G. E. S.; Chandramouli, S. V.; Vanasse, B. J.; Ayers, T. A.; O'Brien, M. K.; Lobkovsky, E.; Gruner, S. M.; Marohn, J. A.; Collum, D. B. Characterization of β -Amino Ester Enolates as Hexamers via ^6Li NMR Spectroscopy. *J. Am. Chem. Soc.* **2004**, *126*, 5938–5939.
2. McNeil, A. J.; Hinkle, R. J.; Rouse, E. A.; Thomas, Q. A.; Thomas, D. B. Vinyl Carbocations: Solution Studies of Alkenyl(aryl)iodonium Triflate Fragmentations. *J. Org. Chem.* **2001**, *66*, 5556–5565.
1. Hinkle, R. J.; McNeil, A. J.; Thomas, Q. A.; Andrews, M. N. Primary Vinyl Cations in Solution: Kinetics and Products of β,β -Disubstituted Alkenyl(aryl)iodonium Triflate Fragmentations. *J. Am. Chem. Soc.* **1999**, *121*, 7437–7438.