ANNE J. MCNEIL

PROFESSIONAL EXPERIENCE

Arthur F. Thurnau Professor — Sept 2016–present
Department of Chemistry
Macromolecular Science and Engineering Program
University of Michigan, Ann Arbor, MI

Arthur F. Thurnau Associate Professor — Sept 2013–Aug 2016
Department of Chemistry
Macromolecular Science and Engineering Program
University of Michigan, Ann Arbor, MI

Seyhan N. Eğe Assistant Professor — July 2007–Sept 2013
Department of Chemistry
Macromolecular Science and Engineering Program
University of Michigan, Ann Arbor, MI

EDUCATION

L'Oreal Postdoctoral Fellow — 2005–2007
Massachusetts Institute of Technology, Cambridge, MA
Advisor: Professor Timothy M. Swager

Ph.D. in Chemistry — Jan 2005
Cornell University, Ithaca, NY
Thesis title: Structure and Reactivity of Lithium Enolates Derived from β-Amino Esters and β-Amino Carboxamides.
Advisor: Professor David B. Collum

B.S. in Chemistry, *summa cum laude* — May 1999
College of William and Mary, Williamsburg, VA
Advisor: Professor Robert J. Hinkle

AWARDS

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*	2009
3M Nontenured Faculty Research Award	2009/2010/2011
Seyhan N. Eğe Junior Faculty Award	2009

RESEARCH PUBLICATIONS (AT MICHIGAN)

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.

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.

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.

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.

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.

33. McNeil, A. J. My Maize and Blue Brick Road to Physical Organic Chemistry. *Beilstein J. Org. Chem*. **2016**, *12*, 229–238.

32. Bryan, Z. J.; 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.

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.

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.

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 {[Fe(OEP)]2(mu-N2O2)}: 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.

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)

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)Cl_2-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 ^{6}Li 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.

CURRENT RESEARCH SUPPORT

Source: Army Research Office – PECASE (PI)
Title: New Microstructures for Old Monomers: Syntheses of Gradient π-Conjugated Copolymers
Dates of Project: 06/2012 – 11/2017
Amount: $994,087 (total costs)

Source: Camille and Henry Dreyfus Foundation Teacher-Scholar Award (PI)
Title: Towards the Next Generation of Tunable Organic Materials
Dates of Project: 09/2012 – 08/2017
Amount: $75,000 (total costs)

Source: National Science Foundation – WIDER (Leadership Committee)
Title: REBUILD: Changing the Culture of Introductory STEM Instruction at the University of Michigan
Dates of Project: 03/2014 – 02/2017
Amount: $1.97M to center, $15,000 to McNeil lab (total costs)

Source: Office of Naval Research (co-PI)
Title: Experimental and Theoretical Design of Multi-Tasking Catalysts: New Routes for the Synthesis of Precision Polymeric Materials
Dates of Project: 04/2014 – 3/2018
Amount: $3,000,000 (total costs, 500K to McNeil Group)

Source: Howard Hughes Medical Institute Professors Competition (PI)
Title: Creating REAL (Research Experiences in Authentic Laboratories) Science
Dates of Project: 09/2014 – 8/2019
Amount: $1,000,000 (total costs)

Source: National Science Foundation – EAGER (PI)
Title: Exploring Radical Anions as Catalysts in Conjugated Polymer Synthesis
Dates of Project: 04/2015 – 03/2017
Amount: $200,000 (total costs)

Source: National Science Foundation – CHE (PI)
Title: Next Generation Catalyst-Transfer Polycondensations
Dates of Project: 04/2016 – 03/2019
Amount: $450,000 (total costs)

Source: Associate Professor Support Funds (PI)
Title: Generating Highly Selective Heterogenous Catalysts from Molecular Gel Templates
Dates of Project: 07/2015 – 06/2017
Amount: $100,000 (total costs)

Source: Center for Research on Teaching and Learning (PI)
Title: Transforming Learning for the Third Century – Networks for Engaged Teaching
Dates of Project: 05/2016 – 04/2017

Amount: $1,000 (total costs)