Emily Pentzer, PhD

Senior Associate Dean for Research, College of Arts and Sciences
Professor, Department of Chemistry
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Texas A&M University
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Professional Experience

Senior Associate Dean for Research, College of Arts & Sciences, Texas A&M University (College Station, TX): Oct. 2025-present.

Associate Dean for Research, College of Arts & Sciences, Texas A&M University (College Station, TX): Jan. 2025-Oct. 2025.

Professor of Chemistry; Materials Science and Engineering (courtesy); Chemical Engineering (courtesy), Texas A&M University (College Station, TX): Sept. 2024-present.

Associate Professor of Materials Science and Engineering; Chemistry; Chemical Engineering (courtesy), Texas A&M University (College Station, TX): July 2019-August 2024.

Frank Hovorka Assistant Professor of Chemistry; adjunct professor Macromolecular Science and Engineering; Case Western Reserve University (Cleveland, OH): July 2017-June 2019.

Assistant Professor of Chemistry, Case Western Reserve University (Cleveland, OH): July 2013-June 2017.

Postdoctoral Associate, University of Massachusetts Amherst Polymer Science and Engineering (Amherst, MA): July 2010-May 2013. Project title: *Synthesis and assembly of n-type and p-type materials for organic photovoltaic applications* (Advisor: Prof. Todd Emrick).

Education

Ph.D. Chemistry. *Northwestern University* (Evanston, IL): Aug 2005-May 2010. Dissertation title: *RCM and ROMP: Metathesis routes to novel monomers and degradable polymers* (Advisor: Prof. SonBinh T. Nguyen).

B.S. Chemistry *Butler University* (Indianapolis, IN): Aug 2001-May 2005. Highest honors, summa cum laude. Thesis title: *Isolation and identification of compounds in caramelized carbohydrates* (Advisor: Prof. Anne Wilson).

Current Research Areas

Tailoring organic materials properties for applied science

https://epentzer.wixsite.com/pentzerlab

1. 2D particles surfactants and non-aqueous emulsions
2. Polymer chemistry
3. Additive manufacturing of composites

4. Applications in CO_2-sequestration, thermal energy management, electrochemical energy storage

Awards & Honors

2024	ACS POLY Fellow, American Chemical Society Polymer Division
2024	Vanguard Visiting Fellow (University of Birmingham, UK)
2023	*Journal of Polymer Science* Innovation Award (Wiley)
2023	Phi Beta Kappa, elected Alumni Member at Butler University
2022	Blavatnik Award Finalist, Physical Sciences and Engineering
2022	Faculty Fellow Award, Texas A&M Engineering Experiment Station (TEES)
2021	Presidential Impact Fellow, Texas A&M University
2021	Rising Star Award, American Chemical Society (ACS) WCC
2021	Class of Influential Researchers, *Industrial & Engineering Chemistry Research*
2021	AZZ Inc. Faculty Fellow (TAMU Department of Materials Science & Engineering)
2020	Wall of Fame, Bedford North Lawrence High School
2019	CWRU Faculty Diversity Excellence Award
2018	CWRU Diekhoff Award for Distinguished Graduate Mentoring (nominee)
2017	CWRU Outstanding Professor Award from Engineering Groups
2017	PMSE Young Investigator (an award from the PMSE division of ACS)
2016	NSF CAREER Award
2015	CWRU Glennan Fellowship
2014	CWRU Carl Wittke Award for Undergraduate Teaching (nominee)
2014	ACS Petroleum Research Fund New Investigator Award
2009	Northwestern Univ. Gelewitz Award for outstanding chemistry graduate student
2006	National Science Foundation Graduate Research Fellow
2005	Butler University Corrine Welling Scholarship
2003	Eli Lilly Science Scholar

Professional Memberships

2020-present	Sigma Xi
2016-present	Royal Society of Chemistry (RSC)
2015-present	International Polymer Colloids Group (IPCG)
2015-2019	Microscopy Society of Northeast Ohio (MSN)
2013-2015	American Association for the Advancement of Science (AAAS)
2006-present	American Chemical Society (ACS, PMSE and POLY divisions)
2004-present	Iota Sigma Pi National Honor Society of Women in Chemistry

Publications

Undergraduate co-authors are underlined. *High school co-authors are italicized*.

In Preparation

5. Solvation and Sequence Effects on the Mechanical Properties of Crosslinked Block Copolymers. Hsieh, C.-M.; Schoonover, K. G.; Ahmed, N.; Qian, S.; Hore, M. J. A.; Hsiao, K.; Yuan, Y.; Sengoden, M.; Darensbourg, D. J.*; **Penter, E**.*; Wei, P.*
4. Emerging and Hybrid Composites for Direct Air Capture of CO_2. Al-Mahbobi, L.; Simmons, S.; Hosseini, A. A.; **Pentzer, E**.*

3. Structural Relaxation and Anisotropic Elasticity of Ordered Block Copolymer Melts. Schoonover, K. G.; Rawat, G.; **Pentzer, E. B**.; Dimitriyev, M. S.*
2. Effect of Surfactant Type on the Electrochemical Response of Microemulsions. Cruz-Barrios, E.*; Meloni, K.; Koloprath, M. A.; Arif, Z.; Hassan, B.; Dadmun, M.; Zawodzinski, T.; Imel, A.; **Pentzer, E.***
1. Tacticity Effect on Electron Transfer in Non-Conjugated Redox Active Polymers. Avais, M.; Chen, W.; Schoonover, K.; Tabor, D.; **Pentzer, E.***; Lutkenhaus, J.*

Submitted or In Revisions

2. Water-Stable Direct Air Capture of CO_2 with Microcapsules of Task-Specific Ionic Liquids and Dielectric Regeneration. Al-Mahbobi, L.; Dasari, S.; Meyers, H. M.; Green, M.; **Pentzer, E.***; Kidder, M.* submitted
1. Recent Advances in 2-Silylketenes as a Molecular Building Block. Satheesh, V.; Avais, M.; **Pentzer, E. B.*** submitted

Independent Career

100. Bioderived, 3D-Printable, and Biocompatible Polycarbonate/Hydroxyapatite Composite Scaffolds. Hsieh, C.-M.; Sengoden, M.; Li, S.-M.; Smolen, J. A.; Ahmed, N.; Wooley, K. L.; Darensbourg, D. J.*; **Pentzer, E. B.***; Wei, P.* *ACS Sustainable Chemistry and Engineering*, *13*, 17496-17509. DOI: 10.1021/acssuschemeng.5c06987
99. Revealing the Effect of Pendant Identity on the Electrochemistry of Non-conjugated Redox Active Polymers. Fox, E.; Wang, C.; Avais, M.; Schoonover, K.; Jergens, E.; Torres, D.; Lutkenhaus, J.*; **Pentzer, E.*** **2025**, *ChemSusChem*, *18*, e202501121. DOI: 10.1002/cssc.202501121
98. Molecular Design Considerations for Azobenzene Anolytes. Banik, A.; Sengupta, U.; Hughes, H.; Sabhapathy, P.; Gurkan, B.*; **Pentzer, E. B.***; Powers, D. C.* **2025**, *ACS Omega*, 10, 26199-26206. DOI: 10.1021/acsomega.5c05073
97. Printable fluorinated poly(ionic liquid)-ionic liquid composite membranes for fluorinated gas separation. Pulukkody, R.; Hsieh, C.-M.; Harders, A.N.; Mendoza-Apodaca, Y.; Shifflet, M.; **Pentzer, E.*** *RSC Applied Polymers*, **2025**, accepted. DOI: 10.1039/D5LP00014A
96. Redox-Active Polymer-Grafted Particles as Redox Mediators for Enhanced Charge Transport in Solution-State Electrochemical Systems. Avais, M.; Thakur, R.; Fox, E.; Lutkenhaus, J.*; **Pentzer, E.*** *Chemical Science*, **2025**, *16*, 8357-8368. DOI: 10.1039/D5SC0051C
95. Multi-Component Lubricant Additives Derived from Pickering Emulsion-Templated Ionic Liquid Microcapsules. Yan, J.; Lak, S. N.; **Pentzer, E. B**.; Mangolini, F.* *Journal of Molecular Liquids*, **2025**, *422*, 126917. DOI: 10.1016/j.molliq.2025.126917.
94. Polymer Precipitation as a Route to Encapsulation. Cruz-Barrios, E.; Lak, S. N.; Taylor, C.; **Pentzer, E. B.*** *Journal of Polymer Science*, **2025,** *63*, 146-163. DOI: 10.1002/pol.20240607
93. Capsule Fusion to Produce Liquid-Filled Monoliths for Carbon Capture. Hsieh, C.-M.; Al-Mahbobi, L.; Dasari, S.; Avais, M.; Cao, H.; Wei, P.; Wang, Y.; Green, M. J.; **Pentzer, E. B.*** *Journal of Materials Chemistry A*, **2024**, *12*, 29749-29762. DOI: 10.1039/D4TA04906C

92. Double Emulsion Microencapsulation of Ionic Liquids for Carbon Capture. Starvaggi, N.; Al-Mahbobi, L.; Zeeshan, M.; Cruz-Barrios, E.; Gurkan, B.; **Pentzer, E.*** *Materials Horizons*, **2024**, *11,* 6057-6063. DOI: 10.1039/D4MH00796D
91. Bridging Polymer Architecture, Printability, and Properties by Digital Light Processing of Block Copolycarbonates. Schoonover, K.; Hsieh, C.-M.; Sengoden, M.; Ahmed, N.; Kalairaj, M. S.; Ware, T. H.; Darensbourg, D. J.*; **Pentzer, E. B.***; Wei, P.* *Chemical Science*, **2024**, *15*, 14228-14240. DOI: 10.1039/d4sc04593a
90. Oxadiazole Derivatives as Stable Anolytes for > 3 V Non-aqueous Redox Flow Batteries. Jesse, K. A.; Diaz-Abad, S. D.; Van Pelt, C. E.; **Pentzer, E.**; Davis, B. L.*; Maurya, S.* *Chemical Engineering Journal*, **2024**, *496*, 153732. DOI: 10.1016/j.cej.2024.153732
89. Direct Ink Writing of Porous Shape Memory Polymers. Raghuvaran, G.; Nitschke, B.; Roberts, C.; Grunlan, M.; **Pentzer, E. B.*** *Materials Advances*, **2024**, *5*, 5763-5771. DOI: 10.1039/D4MA00137K
88. Architected MXenes in Polymer Composites. Cao, H.; Neal, N.; Pas, S.; Radovic, M.; Lutkenhaus, J. L.; Green, M. J.; **Pentzer, E. B.*** *Progress in Polymer Science*, **2024**, 153, 101830. DOI: 10.1016/j.progpolymsci.2024.101830
87. Polymer Encapsulated Liquid Mixtures with Mitigated Evaporation and Enhanced CO_2 Absorption. Taylor, C.; Klemm, A.; Al-Mahbobi, L.; Bradford, B. J.; Gurkan, B.; **Pentzer, E.*** *ACS Sustainable Chemistry and Engineering*, **2024**, *12*, 7882-7993. DOI: 10.1021/acssuschemeng.4c01265
86. CO_2 Capture with Capsules of Ionic Liquids and Amines. Al-Mahbobi, L.; Taylor, C.; Klemm, A.; Gurkan, G.; **Pentzer, E.*** *ACS Applied Engineering Materials*, **2024**, *2*, 1298-1305. DOI: 10.1021/acsaenm.4c00118
85. Synthesis and Characterization of Fluorinated Ionic Liquids and Their Application in Hydrofluorocarbon Gas Uptake. Pulukkody, R.; Baca, K.; Lak, S. N.; Butler-Christodoulou, A.; Shiflett, M. B.; **Pentzer, E. B.*** *Industrial Chemistry and Engineering Research*, **2024**, *63*, 8761-8771. DOI: 10.1021/acs.iecr.4c00370
84. 3D Printing of Hybrid Solid-Liquid Structures. Hsieh, C.-M.; Cipriani, C.; **Pentzer, E.*** *Polymer International*, **2024**, *73*, 793-802. DOI: 10.1002/pi.6636
83. Kinetics of the Plastic Crystal Transition in Neopentyl Glycol. Somodi, C.; Tabor, D.; McCormick, K. **Pentzer, E.**; Shamberger, P.* *Journal of Applied Physics*, **2024**, *135*, 145101. DOI: 10.1063/5.0192791
82. Microcapsule Fabrication by ATRP at Non-Aqueous Emulsion Interfaces. Starvaggi, N.C.; Somodi, C.; Cruz Barrios, E.; Shamberger, P.; **Pentzer, E. B.*** *Chemical Communications*, **2024**, *60*, 4346-4349. DOI: 10.1039/D4CC00736K
81. Synthesis of Alkoxy-TEMPO Aminoxyl Radicals and Electrochemical Characterization in Acetonitrile for Energy Storage Applications. Escamilla, M.; Zuleta Suarez, E. C.; Davis, H. K.; Johnson, J.; Imel, A.; Barth, B. A.; **Pentzer, E.**; Zawodzinski, T.* *Journal of the Electrochemical Society*, **2024**, *171*, 040533. DOI: 10.1149/1945-7111/ad30d2

80. $Ti_3C_2T_z$ MXene-Polymer Composites Structured from Non-Aqueous Emulsions. Cao, H.; Wang, Y.; Tan, Z.; Harkin, E.; Dasari, S. S.; Lutkenhaus, J. L.; Radovic, M.; **Pentzer, E. B.***; Green, M. J.* *Matter*, **2024**, *7*, 1766-1784. DOI: 10.1016/j.matt.2024.02.011
79. Mesomorphism of Imidazolium-based Fluorinated Ionic Liquids. Pulukkody, R.; Lee, Y.-J.; Ware, T. H.; **Pentzer, E.*** *Journal of Ionic Liquids,* **2024**, *4*, 100085. DOI: 10.1016/j.jil.2024.100085
78. Direct Ink Writing of Polyimide Aerogels for Battery Thermal Mitigation. Cipriani, C. E.; Dornbusch, D. A.; Vivod, S.*; **Pentzer, E.*** *RSC Applied Polymers*, **2024**, *2*, 71-86. DOI: 10.1039/D3LP00200D
77. Charge Transfer in Spatially Defined Organic Radical Polymers. Ma, T.; Fox, E.; Qi, M.; Li, C.-H.; Sachinthani, K. A. N.; Mohanty, K.; Tabor, D.; **Pentzer, E.*;** Lutkenhaus, J.* *Chemistry of Materials*, **2023**, *35*, 9346-9351. DOI: 10.1021/acs.chemmater.3c02148
76. Morphology Mapping for Identification of Bijel Ink for Conductive Porous Structures. Wang, Y.; Cipriani, C.; Hsieh, C.-M.; Cao, H.; Sarmah, A.; Liu, K.-W.; Green, M.; Wei, P.*; **Pentzer, E.*** *Matter*, **2023**, *6*, 4066-4085. DOI: 10.1016/j.matt.2023.10.001
75. Wettability-Tuned Silica Nanoparticles for Tailored Pickering Emulsion Templates. Starvaggi, N.; Bradford, B. J.; Taylor, C.; **Pentzer, E.*** *Soft Matter*, **2023**, *19*, 7635-7643. DOI: 10.1039/D3SM00860F
74. First Measurements of the Sorption of Difluoromethane and Pentafluoroethane in Encapsulated Ionic Liquids. Baca, K. R.; Harders; A. N.; Starvaggi, N.; Yancey, A. D.; Wang, Y.; **Pentzer, E.**; Shiflett, M. B.* *Industrial & Engineering Chemical Research*, **2023**, *62*, 14522-14536. DOI: 10.1021/acs.iecr.3c01745
73. Go with the flow: Rheological Requirements for Direct Ink Write Printability. Wei, P.*; Cipriani, C.; Hsieh, C.-H.; Kamani, K.; Rogers, S.*; **Pentzer, E.*** *Journal of Applied Physics*, **2023**, *134*, 100701. DOI: 10.1063/5.0155896
72. Capsules with Responsive Polymeric Shells for Applications Beyond Drug Delivery. Wang, Y.; Starvaggi, N.; **Pentzer, E.*** *Polymer Chemistry*, **2023**, *14*, 4033-4047. DOI: 10.1039/D3PY00434A
71. Printing Composites with Salt Hydrate Phase Change Materials for Thermal Energy Storage. Lak, S. N.; Hsieh, C.-M.; Al-Mahbobi, L.; Wang, Y.; Chakraborty, A.; Yu, C.; **Pentzer, E. B.*** *ACS Applied Engineering Materials,* **2023**, *1*, 2279-2287. DOI: 10.1021/acsaenm.3c00324
70. Pickering Emulsions as Templates for Architecting Composite Structures. **Pentzer, E.***; Cruz Barrios, E.; Starvaggi, N. *Accounts of Materials Research*, **2023**, *4*, 641-647. DOI: 10.1021/accountsmr.3c00058
69. Direct Air Capture of CO_2: From Insights into the Current and Emerging Approaches to Future Opportunities. Zeeshan, M.; Kidder, M. K.; **Pentzer, E.**; Getman, R. B.; Gurkan, B.* *Frontiers in Sustainability*, **2023**, *4*. DOI: 10.3389/frsus.2023.1167713
68. Selective Etching of Ti_3AlC_2 MAX Phases Using Quaternary Ammonium Fluorides Directly Yields $Ti_3C_2T_z$ MXene Nanosheets: Implications for Energy Storage. Kotasthane, V.; Tan, Z.; Yun, J.; **Pentzer, E.**; Lutkenhaus, J. L.; Green, M. J.; Radovic, M.* *ACS Applied Nano Materials*, **2023**, *6*, 1093-1105. DOI: 10.1021/acsanm.2c04607
67. Redox-Active Eutectic Electrolyte with Viologen and Ferrocene Derivatives for Flow Batteries. Ghahremani, R.; Dean, W.; Sinclair, N.; Shen, X.; Starvaggi, N.; Alfurayj, I.; Burda, C.; **Pentzer, E.**;

Wainright, J.; Savinell, R.; Gurkan, B.* *ACS Applied Materials and Interfaces*, **2023**, *15*, 1148-1156. DOI: 10.1021/acsami.2c18546.

66. Engineering Multifunctional Nanosheet $LiCoO_2$ Catalysts: Structural Disorder to Microstructural Exfoliation. Pachuta, K. G.; Zhen, X.*; Mofarah, S. S.*; Sorrell, C.; Tsounis, C.; Scott, J.; Sehirlioglu, A.; **Pentzer, E. B**.; Koshy, P.* *ACS Applied Energy Materials*, **2022**, *5*, 14290-14300. DOI: 10.1021/acsaem.2c02849
65. Impact of Shell Composition on Uptake of Methyl Red from Water by Ionic Liquid Capsules. Edgehouse, K.; Starvaggi, N.; Rosenfeld, N.; Bergbreiter, D.; **Pentzer, E.*** *Langmuir*, **2022**, *38*, 13849-13856. DOI: 10.1021/acs.langmuir.2c02015
64. Open-Cell PolyHIPEs from Polymerizable Eutectics: Tunable Morphology, Surface Modification, and Thermoresponsive Swelling Behavior. Nahar, Y.; Wei, P.; Cipriani, C.; Khodabandeh, A.; Bissember, A. C.; **Pentzer, E. B.**; Thickett, S. C.* *ACS Applied Polymer Materials*, **2022**, *4*, 8429-8440. DOI: 10.1021/acsapm.2c01354
63. Electrically Conductive Porous $Ti_3C_2T_z$ MXene-Polymer Composites Produced from High Internal Phase Emulsions (HIPEs). Cao, H.; Wang, Y.; Tan, Z.; Sarmah, A.; Echols, I. J.; Liu, K.-W.; Arole, K. D.; Luktenhaus, J. L.; Radovic, M.; Green, M.*; **Pentzer, E. B.*** *2D Materials*, **2022**, *9*, 044004. DOI: 10.1088/2053-1583/ac914c (invited)
62. Encapsulation of Hygroscopic Liquids via Polymer Precipitation in Non-aqueous Emulsions. Lak, S.; Ahmed, S.; Shamberger, P.; **Pentzer, E.*** *Journal of Colloid and Interface Science*, **2022**, *628*, 605-613. DOI: 10.1016/j.jcis.2022.08.083
61. Stiff and stretchy? Topological control of hydrogen0bonding clusters for toughening elastomers. Wei, P.*, **Pentzer, E. B.*** *Matter*, **2022**, *5*, 2479-2481. DOI: 10.10105/j.matt.2022.06.025
60. Viscoelastic and Thixotropic Characterization of 3D Printable Paraffin/Photopolymer Composites. Cipriani, C. E.; Shu, Y.; **Pentzer, E. B.**; Benjamin, C. C.* *Physics of Fluids*, **2022**, *34*, 093106. DOI: 10.1063/5.0104157
59. Modular Platform for 3D Printing Fluid-Containing monoliths. Cipriani, C. E.; Starvaggi, N. C.; Edgehouse, K. J.; Price, J. B.; Vivod, S. L.; **Pentzer, E. B.*** *Molecular Systems Design & Engineering*, **2022**, *7*, 1039-1044. DOI: 10.1039/D2ME00102K
58. 3D Printing CO_2-Based Triblock Copolymers and Post-Printing Modification. Wei, P.; Bhat, G. A.; Cipriani, C.; Mohammad, H.; Schoonover, K.; **Pentzer, E.***; Darensbourg, D.* *Angewandte Chemie*, **2022**, e202208355. DOI: 10.1002/anie.202208355
57. Temperature-Dependent Capsule Shell Bonding and Destruction Based on Hindered Poly(urea-urethane) Chemistry. Wang, Y.; Wei, P.; Zhou, Q.; Cipriani, C.; Qi, M.; Sukhishvili, S.; **Pentzer, E.*** *Chemistry of Materials*, **2022**, *34*, 5821-5831. DOI: 10.1021/acs.chemmater.2c00415
56. The Role of Antioxidant Structure in Mitigating Oxidation in $Ti_3C_2T_x$ and Ti_2CT_x MXenes. Zhao, X., Cao, H., Coleman, B.; Tan, Z.; Echols, I.; **Pentzer, E**.; Lutkenhaus, J.; Radovic, M.; Green, M.* *Advanced Materials Interfaces*, **2022**, 2200480. DOI: 10.1002/admi.202200480 *Editor's Choice*
55. Thermal Stability and Flammability Studies of MXene-Organic Hybrid Polystyrene Nanocomposites. Zhang, Z.; Cao, H.; Quan, Y.; Ma, R.; **Pentzer, E. B**.; Green, M. J.; Wang, Q.* *Polymers*, **2022**, *14*, 1213. DOI: 10.3390/polym14061213

54. Inverse Emulsion-Crosslinked Cyclodextrin Polymer Nanoparticles for Selective Adsorption and Chemiresistive Sensing of BTEX. Phillips, B.; Abani; Lin, H.; Wei, P.; Li, C.; Zhao, M.; Handy, J.; Banerjee, S.; Sue, H.-J.; **Pentzer, E**.; Al-Hashimi, M.; Zhao, H.-C.; Fang, L.* *Materials Today Chemistry*, **2022**, *24*, 100915. DOI: 10.1016/j.mtchem.2022.100915.
53. Polymer Particles Armored with Cobalt Oxide Nanosheets for the Catalytic Degradation of Bisphenol A. Escamilla, M.; Pachuta, K.; Huang, K.; Klingseisen, M.; Cao, H.; Zhang, H.; Sehirlioglu, A.; **Pentzer, E.*** *Materials Advances*, **2022**, *3*, 2345-2363. *2022 Popular Advances Collection*. DOI: 10.1039/D1MA00832C
52. Liquid-Phase Exfoliation Method to Access Cobalt Oxide Nanosheets in pH-Neutral Solutions. Pachuta, K.; Volkova, H.; Hirt, B. Berger, M.-H.; **Pentzer, E**.; Sehirlioglu, A.* *Journal of the American Ceramic Society*, **2022**, *105*, 1904-1912. DOI: 10.1111/jace.18199
51. Synthesis and Electronic Applications of Polymer Films Templated by $Ti_3C_2T_z$ MXene-Armored Particles via Pickering Emulsion Polymerization. Cao, H.; Escamilla, M.; Anas, M.; Tan, Z.; Gulati, S.; Yun, J.; Luktenhaus, J.; Radovic, M; **Pentzer, E.***; Green, M.* *ACS Applied Materials & Interfaces*, **2021**, *13*, 51556-51566. DOI: 10.1021/acsami.1c16234
50. Intrinsic Green Fluorescent Cross-Linked Poly(ester amide)s by Spontaneous Zwitterionic Copolymerization. Zia, A.; Finnegan, J. R.; Morrow, J. P.; Yin, W.; Jasieniak, J. J.; **Pentzer, E**.; Thickett, S.; Davis, T. P.; Kempe, K.* *Biomacromolecules*, **2021**, *22*, 4794-4804. DOI: 10.1021/acs.biomac.1c01087
49. Capsules of Poly(alpha-olefins) for Removal of BETX from Water. Edgehouse, K.; Rosenfeld, N.; Bergbreiter, D.*; **Pentzer, E.*** *Industrial & Engineering Chemistry Research*, **2021**, *60*, 14455-14463. (part of *2021 Class of Influential Researchers*) DOI: 10.1021/acs.iecr.1c02819
48. Capsules with Polyurea Shells and Ionic Liquid Cores for CO_2 Capture. Gaur, S. S.; Edgehouse, K.; Klemm, A.; Wei, P.; Gurkan, B.*; **Pentzer, E.*** *Journal of Polymer Science*, **2021**, *59*, 2980-2989. DOI: 10.1002/pol.20210342
47. Structure-Processing-Property Relationships of 3D Printed Porous Polymeric Materials. Cipriani, C.; Ha, T.; Martinez, O.; Myneni, M.; Wang, Y.; Benjamin, C.; Wang, J.*; **Pentzer, E.***; Wei, P.* *ACS Materials Au*, **2021**, *1*, 69-80. *Invited to inaugural issue*. DOI: 10.1021/acsmaterialsau.1c000017
46. Ultrathin 2D-Oxides: A Perspective on Fabrication, Structure, Defect, Transport, Electron and Phonon Properties. Radha, S. K.; Crowley, K.; Holler, B. A.; Gao, X. P. A.; Lambrecht, W. R. L.; Volkova, H.; Berger, M.-H.; **Pentzer, E**.; Pachuta, K.; Sehirlioglu, A.* *Journal of Applied Physics*, **2021**, *129*, 220903. DOI: 10.1063/5.0051093
45. Inter-Capsule Fusion and Capsule Shell Destruction using Dynamic Covalent Polymers. Wang, Y.; Quevedo, K.; **Pentzer, E.*** *Polymer Chemistry*, **2021**, *12,* 2695-2700. DOI: 10.1039/D1PY00271F
44. Thermal Energy Regulation with 3D Printed Polymer-Phase Change Material Composites. Wei, P.; Cipriani, C.; **Pentzer, E.*** *Matter*, **2021**, *4,* 1975-1989. DOI: 10.1016/j.matt.2021.03.019
43. Flocculation of MXenes and Their Use as 2D Particle Surfactants for Capsule Formation. Cao, H.; Escamilla, M.; Arole, K.; Holta, D.; Luktenhaus, J.; Radovic, M.; Green, M.; **Pentzer, E.*** *Langmuir*, **2021**, *37*, 2649-2657. DOI: 10.1021/acs.langmuir.0c03244
42. Electron Microscopy and Spectroscopic Study of Structural Changes, Electronic Properties, and Conductivity in Annealed Li_xCoO_2. Volkova, H.; Pachuta, K.; Crowley, K.; Radha S. K.; **Pentzer, E**.,

Gao, X. P. A.; Lambrecht, W. R. L.; Sehirlioglu, A.; Berger, M.-H.* *Physical Review Materials*, **2021**, *5*, 015401. DOI: 10.1103/PhysRevMaterials.5.015401

41. Evaluating the Chemical Exfoliation of Lithium Cobalt Oxide using UV-Vis Spectroscopy. Pachuta, K.; **Pentzer, E.**; Sehirlioglu, A.* *Nanoscale Advances*, **2020**, *2*, 5362-5374. DOI: 10.1039/D0NA00755B
40. Advances and Opportunities of Oil-in-Oil Emulsions. Zia, A.; **Pentzer, E**.*; Thickett, S.*; Kempe, K.* *ACS Applied Materials & Interfaces*, **2020**, *12*, 38845-38861. DOI: 10.1021/acsami.0c7993
39. Electrical Characterization and Charge Transport in Chemically Exfoliated 2D Li_xCoO_2 Nanoflakes. Crowley, K.; Pachuta, K.; Radha, S.; Volkova, H.; Sehirlioglu, A.; **Pentzer, E.**; Lambrecht, W. R. L.; Gao, X.* *Journal of Physical Chemistry*, **2020**, *124*, 20693-20700. DOI: 10.1021/acs.jpcc.0c04747
38. 100th Anniversary of Macromolecular Science Viewpoint: Polymerization of Cumulated Bonds: Isocyanates, Allenes, and Ketenes as Monomers. Mitchell, S.; Sachinthani, K. A. N.; Pulukkody, R.; **Pentzer, E**.* *ACS Macro Letters*, **2020**, *9*, 1046-1059. DOI: 10.1021/acsmacrolett.0c00396 *Invited*
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24. Pickering Emulsion-Templated Encapsulation of Ionic Liquids for Contaminant Removal. Luo, Q.; Wang, Y.; Chen, Z.; Wei, P.; Yoo, E.; **Pentzer, E**.* *ACS Applied Materials & Interfaces*, **2019**, *11*, 9612-9620. DOI: 10.1021/acsami.8b21881
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3. Interfacial Trapping in an Aged Discotic Liquid Crystal Semiconductor. Dawson, N.; Patrick, M. S.; Paul, S.; Ellman, B.; Semyonov, A. R.; Twieg, R. J.; Matthews, R.; **Pentzer, E.**; Singer, K. D.* *Journal of Applied Physics*, **2015**, *118*, 085502. DOI:10.1063/1.4929749
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As Post Doc, Graduate, and Undergraduate Student

13. Selective Nucleation of Poly(3-hexyl thiophene) Nanofibers on Multilayer Graphene Substrates. Acevedo-Cartagena, D.E.; Zhang, Y.; Trabanino, E.; **Pentzer, E.**; Emrick, T.; Briseno, A.L.; Hayward, R.C. *ACS Macro Letters,* **2015**, *4,* 483-487. DOI: 10.1021/acsmacrolett.5b00038
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11. Preparation of Low Band Gap Fibrillar Structures by Solvent Induced Crystallization. Wang, H.W.; **Pentzer, E.B.**; Emrick, T.; Russell, T. *ACS Macro Letters*, **2014**, *3*, 30-34. DOI: 10.1021/mz400431s
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9. Nanoscale Assembly into Extended and Continuous Structures and Hybrid Materials. Emrick, T.; **Pentzer, E.** *NPG Asia Materials,* **2013**, *5*, e43. DOI:10.1038/am.2012.73
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7. Probing Inter- and Intrachain Exciton Coupling in Isolated Poly(3-hexylthiophene) Nanofibers: Effect of Solvation and Regioregularity. Baghgar, M.; Labastide, J.; Bokel, F.; Dujovne, I.; McKenna, A.; Barnes, A. M.; **Pentzer, E.;** Emrick, T.; Hayward, R.; Barnes, M. D. *Journal of Physical Chemistry Letters*, **2012**, *3*, 1674-1649. DOI: 10.1021/jz3005909
6. Nanocomposite "Superhighways" by Solution Assembly of Semiconductor Nanostructures with Ligand-Functionalized Conjugated Polymers. **Pentzer, E.**; Bokel, F.; Hayward, R.; Emrick, T. *Advanced Materials,* **2012**, *24,* 2254-2258. DOI: 10.1002/adma.201104788
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4. Assembly of Poly(3-Hexylthiophene)/CdSe Hybrid Nanowires by Co-crystallization. Bokel, F.; Sudeep, P.; **Pentzer, E.**; Emrick, T.; Hayward, R. *Macromolecules*, **2011**, *44*, 1768-1770.
3. Substrate Encapsulation: An Efficient Strategy for the RCM Synthesis of Unsaturated ϵ-Lactones. **Pentzer, E. B.**; Gadzikwa, T.G.; Nguyen, S.T. *Organic Letters*, **2008**, *10*, 5613-5615. (Highlighted in organic chemistry portal: http://www.organic-chemistry.org/Highlights/2009/15June.shtm)
2. Bioactive and Therapeutic ROMP Polymers. Smith, D.; **Pentzer, E. B**.; Nguyen, S. T. *Polymer Reviews*, **2007**, *47*, 419-459.
1. The Distribution of Fox Squirrel (Sciurus niger) Leaf Nests within Forest Fragments in Central Indiana. Salsbury, C. M.; Dolan, R. W.; **Pentzer, E. B.** *American Midland Naturalist*, **2004**, *151*, 369-377.

Key Collaborators

- Dr. Peiran Wei (Texas A&M)
- Prof. Alp Sehirlioglu (CWRU, Department of Materials Science and Engineering)
- Prof. Burcu Gurkan (CWRU, Chemical Engineering)
- Prof. Micah Green (Texas A&M, Chemical Engineering)
- Prof. Jodie Lutkenhaus (Texas A&M, Chemical Engineering)
- Prof. Patrick Shamberger (Texas A&M, Materials Science and Engineering)

- Prof. Don Darensbourg (Texas A&M, Chemistry)

Invited Oral Presentations

2025: National Fall Meeting of the American Chemical Society (Washington, D.C., PMSE division); 17th International Conference on Materials Chemistry (MC17; **keynote**, Edingburgh, Scotland); Advanced Polymers via Macromolecular Engineering (APME; **keynote**, Catania, Sicily); University of Notre Dame (South Bend, IN); Trinity University (San Antonio, TX); University of Texas El Paso (El Paso, TX); University of Cincinnati (Cincinnati, OH); Duke University (Durham, NC).

2024: (**26**) MRS Boston (Boston, MA); ACS Qatar Chapter/RSC Conference: Synergy for Sustainability (Doha, Qatar); International Symposium on Stimuli Responsive Materials (**plenary**, Windsor, CA); National Fall Meeting of the American Chemical Society (Denver, CO, POLY division); National Fall Meeting of the American Chemical Society (Denver, CO, PMSE division); National Fall Meeting of the American Chemical Society (Denver, CO, COLL division); Gordon Research Conference (GRC): Additive Manufacturing of Soft Materials (Smithfield, RI); Gordon Research Seminar (GRS): Additive Manufacturing of Soft Materials (Smithfield, RI); POWER Women in Polymers Conference (Evanston, IL); Warwick Polymer Conference/IUPAC MACRO2024 (**keynote**, Warwick, UK); University of Birmingham chemistry (Birmingham, UK, electrochemical energy storage) University of Birmingham chemistry (Birmingham, UK, 3D printing); Leiden University (Leiden, Netherlands); Delft University (Delft, Netherlands); University of Warwick (Coventry, UK); University of Birmingham chemistry (Birmingham, UK, emulsion-templated composites); *Birmingham Symposium on Mechanochemistry and Sustainability* (Birmingham, UK); University of Manchester (Manchester, UK); Aldophe Merkle Institute (Fribourg, Switzerland); TU Wein (Vienna, Austria); Swiss Federal Institute for Technology Zurich (ETH, Zurich, Switzerland); American Physics Society National Meeting (Minneapolis, MN); RSC Desktop Seminar: *Polymers for Sustainability* (online); Ecole Polytechnique Federale de Lausanne (EPFL, Lausanne, Switzerland); Johns Hopkins University (ROSEI, Baltimore, MD); Los Alamos National Laboratory (Los Alamos, NM)

2023: (**14**) Pacific Polymers Conference (PPC18, Puerto Vallarta, Mexico, Hybrid Composites); Pacific Polymers Conference (PPC18, Puerto Vallarta, Mexico, 3D/4D Printing); University of Nevada Reno (Reno, NV); Virginia Tech University (Blacksburg, VA); Texas A&M Chemistry (College Station, TX); National Fall Meeting of the American Chemical Society (San Francisco, CA, ENFL division); National Fall Meeting of the American Chemical Society (**Award Talk**, San Francisco, CA, PMSE division); National Fall Meeting of the American Chemical Society (San Francisco, CA, PMSE division); Advanced Polymers via Macromolecular Engineering (APME; Paris, France); National Spring ACS Meeting, PMSE division (Indianapolis, IN); ACS Energy and Fuels Division Invited Talk (virtual); Rice University (chemistry, Houston, TX); Prairie View A&M (chemistry, Prairie View, TX); Youngstown State University (chemistry, virtual)

2022: (27) Pacific Polymer Conference (PPC17) New Polymerization Technologies (Brisbane, Australia); PPC17 Self Assembly and Colloidal Systems (Brisbane, Australia); PPC17 Additive Manufacturing (Brisbane, Australia); Royal Australian Chemical Institute Queensland Polymer Group Symposium (Brisbane, Australia); Japan-US Workshop on Organic/Inorganic Hybrid Materials (Mishima, Japan); University of Houston (chemical engineering, Houston, TX); 1st International Symposium of Precision Polymer Chemistry for Functional Materials (sponsored by ACS, online); University of Illinois Urbana Champaign (department of chemical and biological engineering, Champaign, IL); Rose Hulman Institute of Technology (Terre Haute, IN);

International Symposium on Stimuli Responsive Materials (**Plenary**, Windsor, CA); Society of Engineering Sciences (SES, College Station, TX); Hagler Institute for Advanced Study Symposium (HIAS, College Station, TX, **Keynote**); Polymer Technology Industry Consortium (PTIC, College Station, TX); Texas A&M University Chemistry First Year Program (**FYP**, College Station, TX); University of Rochester (Rochester, NY, chemistry); RSC **Desktop Seminar** (online); IUPAC MACRO2022 (Winnipeg, Manitoba CAN, **Keynote**); Los Alamos National Lab (MP-11, Los Alamos, NM); Tosoh Polymer Conference (Los Angeles, CA); ACS MENA (Doha, Qatar, **Keynote**); UConn (Polymers Program, online); UT Austin (MRSEC talk, online); UC Berkeley (Nanoscience student invited seminar, Berkeley, CA); Drexel University (materials science and engineering, online); NSF Center for Innovative Catalysis (online); University of Tennessee Knoxville (chemistry, Knoxville, TN); Kennesaw State University (online).

2021: (15) Oak Ridge National Lab (online, Manufacturing Directorate); National Spring Meeting of the American Chemical Society (online, POLY division); National Spring Meeting of the American Chemical Society (online, WCC Division, **Award Talk**); National Spring Meeting of the American Chemical Society (online, POLY division); UC Chemical Symposium (online, Ursa Lecture **Keynote**); IUPAC-MACRO 2020 (online); Future of Polymer Chemistry 2021; Texas Soft Matter Symposium (online, **Keynote**); European Recent Appointees in Polymer Science (online, **Plenary**); Univ. of Thailand (online); ACS **Webinar** (Achieving Climate Goals by Capturing Atmospheric Carbon and Storing it, online); University of Birmingham Department of Chemistry (online); UT Dallas Department of Chemistry (Dallas, TX); University of Wisconsin Department of Chemistry (Madison, WI); Michigan State University (East Lansing, MI).

2020: (5) Arizona State University (Tempe, AZ); International Polymer Colloids Group (online); TAMU Chemical Engineering (online); University of Houston SPE (online); George Mason University Department of Chemistry (online).

2019: (18) National Chen Kung University (Tainan, Taiwan); National Taichung University (Hsinchu, Taiwan); Pacific Polymer Conference (PPC16, Singapore, invited); Pacific Polymer Conference (PPC16, Singapore, contributed); University of Georgia *Fall into Research* (Athens, GA, **Keynote**); National ACS Meeting, PMSE division (San Diego, CA); Polymers for Advanced Technologies (College Station, TX); Polymers Gordon Research Conference (Mount Holyoke, MA); Polymers Gordon Research Seminar (Mount Holyoke, MA); Central Eastern Regional Meeting of the ACS (Midland, MI); Massachusetts Institute of Technology (Program in Polymers and Soft Matter, Boston, MA); Advanced Polymers via Macromolecular Engineering (APME, Stellenbosch, South Africa, **Keynote**); University of California Los Angeles (Chemistry, Los Angeles, CA); University of Southern California (Chemistry, Los Angeles, CA); American Physics Society (DPOLY, Boston, MA); University of Kentucky (Chemistry, Lexington, KY); Georgetown University (Chemistry, Washington, DC); University of California San Diego (Nanoengineering, San Diego, CA).

2018: (37) Case Western Reserve University (Macromolecular Science, Cleveland, OH); Boston University (Materials Science, Boston, MA); International Stimuli Responsive Symposium (Healdsburg, CA); University of Houston (Chemistry, Houston, TX); Colorado State University (Chemistry, Fort Collins, CO); Johns Hopkins University (Chemistry, Baltimore, MD); Carnegie Mellon University (Chemistry, Pittsburgh, PA); National ACS Meeting, ENFL division (Boston, MA); National ACS Meeting, PMSE division (Boston, MA); National ACS Meeting, POLY division (Boston, MA); MACRO2018 RSC Polymer Chemistry Symposium (Cairns, Australia); MACRO2018 Smart and Functional Polymers Symposium (Cairns, Australia); University of New South Wales (Sydney, Australia); Lubrizol (Painesville, OH); Johannes Gutenburg University Mainz (Chemistry, Mainz, Germany); Adolphe Merkle Institute (Fribourg, Switzerland); Texas A&M

(Materials Science and Engineering, College Station, TX); BASF (Wyandott, MI); Promerus Corporation (Brecksville, OH); Wright Patterson Air Force Base (Fairborn, OH); Miami University (Chemistry, Oxford, OH); Cleveland Section of the American Chemical Society Meeting in Miniature (Oberlin, OH, **Plenary**); University of Minnesota (Chemistry, Minneapolis, MN); National ACS Meeting, POLY division (New Orleans, CA, invited, one of the 25 "must see" talks from C&E News); McMaster University (Chemistry, Toronto, ON, Canada); University of Toronto (Chemistry, Toronto, ON, Canada); Northwestern University (Chemistry, Evanston, IL); Northwestern University (Diversity talk, Evanston, IL); Columbia University (Chemistry, New York, NY); University of Pittsburgh (Chemistry, Pittsburgh, PA); Creighton University (Omaha, NE); Kansas State University (Manhattan, KS); Florida State University (Tallahassee, FL); University of Florida (Gainesville, FL); Southern Methodist University (Dallas, TX); Texas Tech University (Lubbock, TX); University of Delaware (Newark, DE).

2017: (19) PC15 (Xiamen, China); Macromex 2017 (Los Cabos, Mexico); Texas A&M (Chemistry, College Station, TX); Cleveland State University (Chemistry, Cleveland, OH); National AS Meeting, COLL division (Washington, DC); National ACS Meeting, ENFL division (Washington, DC); ACS POLY division (Washington, DC); GPC2017 (Atlanta, GA, invited); 3rd Functional Polymeric Materials Conference (Rome, Italy, invited); Emergent Macromolecular Systems at CUNY (New York, NY, invited); Cleveland State University (Cleveland, OH); UC San Diego (chemistry, San Diego, CA); Cal Poly San Luis Obispo (San Luis Obispo, CA); National Meeting of the American Chemical Society (San Francisco, CA); UMass Amherst (Amherst, MA); Penn State University (State College, PA); Butler University (Indianapolis, IN); Hunter College (New York, NY); University of Akron (Akron, OH).

2016: (14) Australasian Polymer Symposium (Lorne, Australia, **Keynote**); Denison University (Granville, OH); Wright State University (Dayton, OH); PC2016 (Changchun, China); 5th Zing Polymer Chemistry Conference (Malahide, Ireland); ACS Workshop on Polymer Composites and High Performance Materials (Sonoma, CA); Warwick Polymers Conference (Warwick, UK); USA-Japan Conference on Polymer Chemistry (Niseko, Japan); Regional Meeting of the American Chemical Society (Cincinnati, OH); Tosoh Bioscience Polymer Characterization Symposium (Akron, OH); The Ohio State University (Columbus, OH); National Meeting of the American Chemical Society (San Diego, CA); University of Maine (Orono, ME); University of New Hampshire (Durham, NH).

2015: (11) Pacifichem 2015 (Honolulu, HI); CWRU (Materials Science and Engineering, Cleveland, OH); University of Southern Mississippi (Polymer science, Hattiesburg, MS); Tulane University (New Orleans, LA); University of Mississippi (Oxford, MS); University of Memphis (Memphis, TN); National Meeting of the American Chemical Society (Boston, MA); Fusion conference on Functional Polymeric Materials (Ascot, England); International Polymer Colloids Group Conference (Durham, NH); Wright Patterson Air Force base (Fairborn, OH); National Meeting of the American Chemical Society (Denver, CO)

2014: (9) Fusion Conference on Functional Polymeric Materials (Cancun, Mexico); National Meeting of the American Chemical Society (Dallas, TX); University of Florida (Gainesville, FL, student chapter seminar speaker); CWRU (Chemical Engineering Department, Cleveland, OH); National Meeting of the American Chemical Society (San Francisco, CA); John Carroll University (Cleveland, OH); Youngstown State University (Youngstown, OH); International Symposium on Stimuli Responsive Materials (Sonoma, CA); Zing Polymer Chemistry Conference (Cancun, Mexico)

2013: (8) CWRU (Physics Department, Cleveland, OH); University of Pittsburgh (Pittsburgh, Pennsylvania); National Meeting of the American Chemical Society (Indianapolis, Indiana); University of Zimbabwe (Harare, via Skype); Case Western Reserve University (Cleveland, Ohio); University of Georgia (Athens, Georgia); University of Maine (Orono, Maine); Washington University (St. Louis, Missouri)

2012: (3) New Mexico Institute of Mining and Technology; (Socorro, New Mexico); University of Washington (Seattle, Washington); National Meeting of the American Chemical Society (San Diego, CA)

2011: (2) Oak Ridge National Lab (Oak Ridge, Tennessee); Energy Frontiers Research Summit and Forum (Washington, DC)

2010: **(1)** Clean Energy Connections Conference and Opportunity Fair (Springfield, MA)

2009: **(1)** Graduate Research Symposium of the Gordon Research Conference on Macromolecular Materials (Ventura, CA)

2008: **(1)** NATO Advanced Summer Institute on New Materials via Metal Mediated Macromolecular Engineering: From Complex to Nano Structures (Antalya, Turkey)

National and International Service

- Editor in Chief *RSC Applied Polymers*, 2023-present
- *New Voices* in Science, Engineering, and Medicine, Cohort 3 Member, 2024-present
- Executive Committee, *Beckman Foundation Postdoctoral Fellowship Program*, 2025-present
- *ACS Board Standing Committee on Petroleum Research Fund*, 2025-present
- Associate Editor, *Polymer Chemistry* (a journal of the RSC), 2015-2024
- Editorial Advisory Board Member
    - *Polymer Science & Technology* (a journal of the ACS), 2023-present
    - *Chemical Science* (a journal of the RSC), 2023-present
    - *ACS Applied Materials & Interfaces* (a journal of the ACS), 2020-present
    - *ACS Applied Engineering Materials* (a journal of the ACS), 2023-present
    - Journal of Molecular Liquids, 2024-present
    - *Journal of Polymer Science* (a journal of Wiley), 2019-present
    - *Journal of Ionic Liquids* (a journal of Elsevier), 2021-present
    - *Macromolecules* (a journal of the ACS), 2017-2021
- Society of Women Engineers Annual High School Conference Lab Tour, 2023
- Advisory Committee/ Advisory Board
    - Adolphe Merkle Institute (Fribourg, Switzerland), Chair, 2024-present
    - EFRC Regenerative Energy-Efficient Manufacturing of Thermoset Polymeric Materials (REMAT at University of Illinois Urbana Champagne), 2023-present
    - NSF Center for the Chemistry of Molecularly Optimized Networks (MONET at Duke University), 2021-present
- Guest Editor for journal special issues
    - *Materials Advances*, ACS PMSE Young Investigators, 2023
    - *Journal of Physical Chemistry,* Deep Eutectic Solvents, 2020
    - *Polymer Chemistry*, Pioneering Investigators, 2021
    - *Polymer Chemistry,* Pioneering Investigators, 2019
    - *Polymer Chemistry,* Pioneering Investigators, 2017

- Mentor for NSF sponsored *Future Faculty Workshop: Preparing Diverse Leaders for the Future*, 2016-present
    - Co-organizer at CWRU, 2017; Texas A&M, 2023
- ACS POLY division Publicity Chair, 2015-2022
- ACS POLY and PMSE student chapter coordinator, 2014-2017
- NSF EFRI Topic Proposal Blue Ribbon Presentation, 2021

Panel and Ad Hoc Reviewer

- American Chemical Society Women's Chemist Committee (ACS WCC) Rising Star Award (2024, 2025)
- IIT Delhi, thesis reviewer (2024)
- Australia National University, thesis reviewer (2023)
- PAZY Foundation (Weizmann Institute of Science, 2023)
- BioPACIFIC MIP (2022-2024)
- Beckman Foundation (2020-2024)
- Department of Energy
    - Stanford Linear Accelerator (2018)
    - Molecular Foundry at LBNL (2018, 2019)
    - Plastics (2021)
- University of Tasmania thesis member (2018)
- Netherlands Organization for Scientific Research (2017)
- National Science Foundation
    - Division of Civil, Mechanical, and Manufacturing Innovation (2024)
    - Division of Materials Research (2017, 2018, 2019, 2022)
    - Division of Chemistry (2017, 2018, 2022)
    - Division of Solid State and Materials Chemistry (2017)
    - Division of Chemical, Bioengineering, Environmental, and Transport Systems (2017)
    - Center review (2017, 2019, 2021)
    - Materials innovation platform (2024)
- American Chemical Society Petroleum Research Fund (2016, 2017, 2018, 2019, 2021, 2022)
- American Chemical Society- POLY division Henkel award (2014, 2015)
- CWRU School of graduate studies panel on Writing a Thesis (panelist, 2017)
- NASA NSPIRES fellowship program (2014, 2015)

Journal Referee

ACS Macro Letters, ACS Applied Nano Materials, ACS Applied Polymer Materials, ACS Applied Materials and Applied Interfaces, Advanced Composite Materials, Advanced Materials, Advanced Materials Interfaces, Angewandte Chemie, Chemical Communications, Chemical Engineering Journal, Chemical Science, Chemistry: an Asian Journal, Chemistry of Materials, ChemSusChem, European Polymer Journal, Industrial and Engineering Chemistry Research, Journal of Chemical Education, Journal of Colloid and Interface, Journal of the American Chemical Society, Journal of Materials Chemistry A, Journal of Materials Chemistry C, Journal of Organic Chemistry, Journal of Power Sources, Langmuir, Macromolecules, Macromolecular Materials and Engineering, Polymer, Polymer Chemistry

Panelist

- Department of Chemistry *Selecting an Advisor* (2022)
- Women in Science and Engineering *Round table* (2021)
- Moderator for Panel on *The Design and Integration of Smart Materials Towards a Low Carbon Circular Economy*, Texas A&M Conference on Energy (2022)
- RSC webinar presenter and panelist: *Dealing with Imposter Syndrome* (2023)
- AIAA Propulsion and Energy Forum on Advanced Terrestrial Energy Technologies (panelist, 2014)
- Careers in academic chemistry at Northwestern University chemistry (panelist, 2014)
    - European Research Council *Publishing with Impact: Tips and Tricks from the Editors*, 2025
    - *Chemical Science: Chemistry of Polymer,* 2023
    - RSC webinar presenter and panelist: *Dealing with Imposter Syndrome*, 2023
    - ACS Rocky Mountain Regional Meeting: *Diversity, Equity, and Inclusion in Colleges and Universities*, 2021 (plenary panelist)
    - Texas A&M Department of Chemistry, *Selecting an Advisor*, 2022
    - Texas A&M Conference on Energy: *The Design and Integration of Smart Materials Towards a Low Carbon Circular Economy*, 2022
    - Texas A&M *Women in Science and Engineering*, 2021
    - CWRU School of graduate studies panel on *Writing a Thesis*, 2017
    - AIAA: *Propulsion and Energy Forum on Advanced Terrestrial Energy Technologies*, 2014
    - Northwestern University: *Careers in Academic Chemistry*, 2014

Conference, Symposia, and Panel Organization

- Conference Chair:
    - ACS Qatar Chapter/RSC Conference on Synergy for Sustainability (Doha, Qatar), 2024 (with Prof. Mohammad Al-Hashimi, Khalifa Univ.)
    - Gordon Research Conference on Polymers (Mt. Holyoke, MA)
        - Vice-Co-Chair, 2023 (with Prof. Thomas Epps, UDel)
        - Co-Chair, 2025 (with Prof. Thomas Epps, UDel)
- Organizing or Scientific Advisory Committee
    - Advanced Polymers via Macromolecular Engineering, 2026
    - 3D Additive Manufacturing Conference, 2025
    - IUPAC MACRO2024, 2023-2024
    - Covestro Committee, Texas A&M University, 2022-2024
    - NSF Workshop on *Advanced Manufacturing for Industrial Decarbonization*, 2023
    - Young Investigator Symposium *Alliance for Diversity in Science and Engineering*, 2022, 2023
    - Young chemist PMSE awards: *Young Polymer Scientist and Engineer*, 2018, 2022-2024
    - Society of Engineering Science (SES) Technical Meeting, 2022
    - Tosoh GPC Conference, 2019
- Symposium organizer (at ACS meetings)
    - National:
        - *Harnessing Additive Manufacturing for Energy Management Applications* (ACS Denver, ENFL division, fall 2024), with Peiran Wei and Shuang Cui
        - *PMSE Future Faculty Symposium* (ACS San Francisco, PMSE division, fall 2023), with Chris Soles

- *PMSE Young Investigator Awards* (ACS San Francisco, PMSE division, fall 2023), with Chris Soles
- *PMSE Future Faculty Symposium* (ACS Chicago, PMSE division, fall 2022), with Chris Soles
- *PMSE Young Investigator Awards* (ACS Chicago, PMSE division, fall 2022), with Chris Soles
- *The Next Generation of Functional Polymeric Materials: Correlating Structure, Property, and Application* (ACS San Diego, PMSE division, spring 2022), with Zachariah Page, AJ Boydston
- *Molecules and Particles at Interfaces* (96th ACS Colloid and Surface Science Symposium, 2022, with Hongbo Zheng and Peiran Wei)
- *PMSE Future Faculty Symposium* (ACS San Diego, PMSE division, fall 2019), with Cole DeForest
- *PMSE Young Investigator Awards* (ACS Boston, PMSE division, fall 2018), with Cole DeForest
- *Janus Particles: Synthesis, Characterization, and Application* (ACS San Francisco, PMSE division, spring 2017), with Daeyeon Lee, Stefan Bon, Steffano Saccana
- *Polymer Chemistry (RSC) Lectureship Series* (ACS San Francisco, POLY division, spring 2017), with Jeremiah Johnson, Wei You
- *Design Principles of Functional Macromolecular Materials* (ACS Denver, PMSE division, spring 2015) with Luis Campos, Karen Wooley, AJ Boydston

- Regional*:*
  - *Design, Synthesis, and Characterization of Functional Polymeric Materials* (Oklahoma Cit, OK; Southwest Regional Meeting, 2023, with Cassandra Callmann)
  - *Energy: Solar, Batteries and Beyond* (Tucson, AZ; Rocky Mountain Regional Meeting, fall 2021)
  - *Synthesis and Characterization of Advanced Polymeric Materials* (Midland, MI; Central Regional Meeting, 2019, with Dominik Konkolewicz)

- Symposium organizer (non-ACS meetings)
  - *Design, Manufacturing, and Applications of Adaptable Soft Materials* (Society of Engineering Science, August 2024), with Peiran Wei and Pengfei Cao
  - *Advances in Light-Based Additive Manufacturing* (Materials Research Society, April 2024), with Deryl Yee, Emily Davidson, and Michinao Hashimoto
  - *Sustainability in Soft and Polymeric Materials* (Society of Engineering Science, October 2022), with Svetlana Sukhishvili and Piyush Thakre
  - *Functional Soft Materials in Additive Manufacturing: from Design to Application* (Society of Engineering Science, October 2022) with Peiran Wei
  - *2D Materials and their Composites* (Pacifichem 2020, December 2020), with Per Zetterlund, Elodie Bourget-Lami, Hideto Minami
- Discussion leader
  - Gordon Conference for Polymers (Mt. Holyoke, MA, summer 2015)
  - Gordon Conference for Polymers (Mt. Holyoke, MA, summer 2017)
  - Gordon Conference for Additive Manufacturing of Soft Materials (Ventura, CA, summer 2022)
  - Power Hour Leader at GRC on Polymers (Mt. Holyoke, MA, summer 2017)
  - Power Hour Leader at GRC on Polymers (Mt. Holyoke, MA, summer 2019)

    - Power Hour Leader at GRC on Additive Manufacturing of Soft Matter (Smithfield, RI, summer 2024)
- Symposium Topic Reviewer:
    - Pacifichem2020
- National Symposium Attendee:
    - NAE Frontiers of Engineering Conference (and breakout discussion leader), 2021
    - NAESM US-Arab Symposium, 2023
- Presentation or Poster Judge:
    - Cleveland ACS Meeting in Miniature, Baldwin Wallace, spring 2014
    - ShowCASE, CWRU, spring 2014

News and Interview Highlights

- Guest, *Under the Scope* podcast with Aidan Looby, 2023

University, College, and Department Service

At Texas A&M

- Co-chair: College of Arts & Sciences Strategic Planning Committee on Research, 2025 (with Prof. Simon North)
- Co-Chair: TAMU2040 Strategic Planning Committee on Research, Scholarship, and Creative Works, 2025 (with Prod. Dimitris Lagoudas)
- Reviewer
    - Targeted Proposals Team (TPT) proposal reviewer, 2024
    - National Lab Organization (NLO) proposal reviewer, 2024
    - Reviewer for Texas A&M Research Development Fund (RDF), 2022-2023
    - Reviewer for TAMU Goldwater Scholarship nominees, 2022
    - Panther RISE Grant Program (PRISE) Proposal Reviewer, 2022
    - Energy Institute's New Convergence Research Incubator (CORE), reviewer, 2020
- Chemistry Communications Committee (chair), 2023-2024
- College of Engineering Climate and Culture ad hoc committee, 2022
- Undergraduate Curriculum Committee Chair (Materials Science and Engineering), 2020-2024
- Diversity, Inclusion, and Equity Coordinator (Materials Science and Engineering), 2019-2023
- Engineering Honors Faculty Coordinator (Materials Science & Engineering), 2019-2020
- Faculty Search Committee
    - Chemistry, 2019, 2024
    - Materials Science and Engineering, 2021
- Website Committee (Chemistry), 2019-2022
- Mentor, Take a Scientist to Eat (TASTE, College of Science), 2021
- Faculty Advisory Council, College of Science (representing Materials Science & Engineering), 2019-2022
- Entry-to-a-Major (ETAM) Selection Committee, Materials Science & Engineering, 2019-2023
- DIY Saturday presentation, Materials Science & Engineering, 2021
- Mentor: Academy for Future Faculty (mentee: Alexandra Easley, 2021)
- Panelist:
    - WISE Chemistry Female Faculty Advising (2021)

During time at CWRU

- Mentor, Beckman Scholars Program at CWRU, 2018
- Seminar coordinator, department of chemistry, 2017-2019
- Swagelock Center for Surface Analysis of Materials internal advisory board member, 2016-2018
- University Safety Committee, 2015-2019
- Department of Chemistry Safety Committee, 2016-2019
- Faculty Advisor for Chemistry Graduate Student Association (CGSA), 2016-2019
- Graduate Recruitment and Admissions Committee, Chemistry Department CWRU, 2013-2019
- Co-organizer and presenter: lunch-and-learn on "How to Apply to Graduate School", 2015-2019
- Faculty Search Committees
    - CWRU Chemistry, Fall 2018
    - CWRU Macromolecular Science and Engineering, Spring 2018
    - CWRU Chemistry, Fall 2017
    - CWRU Macromolecular Science and Engineering, Fall 2016
- ShowCASE program board member, CWRU, 2014-2015
- Case Western Reserve University Innovation Summit, attendee, 2015
- Presenter: Organic electronics summer school in northeast Ohio, 2015, 2016
- Institute for Advanced Materials (IAM) internal advisory board member, CWRU, 2014-2016
- ARPA-e summit in Washington, D.C., CWRU representative, 2014
- UC Center for Laboratory Workshop, CWRU representative, 2014

Student Awards and Fellowships

- National Science Foundation GRFP
    - Awarded: Krista Schoonover, 2022
    - Awarded: Nicholas Starvaggi, 2022
- TAMU Society of Plastic Engineering (SPE) Scholarship
    - Awarded: Yifei Wang, 2023
    - Awarded: Huaixuan Cao, 2021
- Gates Millennium Scholarship
    - Awarded: Cameron Taylor, 2020-2023
- NASA Space Technology Graduate Research Fellowship
    - Awarded: Ciera Cipriani, 2020-2023
- Outstanding Presentation Award for O-REU (online REU) at Texas A&M
    - Awarded: Krista Schoonover, 2020
- Outstanding Presentation Award for Graduate Student at ACS Cleveland MiM
    - Awarded: Kevin Pachuta, 2019
    - Awarded: Kevin Pachuta, 2018
- Outstanding Presentation for Undergraduate Student at ACS Cleveland MiM
    - Awarded: Paul Advincula, 2018
- NASA, *Harriet G. Jenkins Graduate Research Fellowship* for
    - Awarded: Bradley Rodier, 2013-2017
- CWRU, *PSURG or SOURCE Summer Research Scholarship*
    - Blaise Whitesell 2017, $4,000
    - Christina Hemmingsen 2017, $4,000
    - Eric Mosher 2016, $4,000
    - Spencer Burton 2015, $4,000

- ShowCASE poster award for graduate student
    - Honorable mention: Rachael Matthews 2015
- ShowCASE poster award for undergraduate student
    - Honorable mention: Riki Drout 2016
    - 2nd place: Emily Glasser 2018; Madelyn McMillan 2019

Mentees

Current Mentees

- Postdocs
    - Dr. Eliandreina Cruz Barrios (2023-present)
    - Dr. Amir Hosseini (2024-present)
- PhD students
    - Ms. Krista Schoonover (2021-present, chemistry)
    - Mr. Christopher Evan van Pelt (2021-present, materials science and engineering)
    - Ms. Bryn Jenkins (2023-present, materials science and engineering)
    - Ms. Ziyue Wang (2023-present, materials science and engineering)
    - Mr. Bilal Hassan (2023-present, chemistry)
    - Mr. Kevin Nguyen (2024-present, chemistry)
    - Ms. Sandra Simmons (2024-present, chemistry)
    - Ms. Lam Ng (2025-present, chemistry)
- Masters Students
    - Ms. Angela Guajardo Rodriguez (2025-present, materials science and engineering)
- Undergraduate Students
    - Mr. Braden “Jack” Bradford (fall 2022, spring 2023, summer 2023, fall 2024)
    - Ms. Katerina Meloni (summer 2024, fall 2024)
    - Ms. Minhchau Do (summer 2024, fall 2024)
    - Ms. Lilly Taylor (fall 2024)
    - Mr. Nichoals McDaniel (spring 2023, fall 2023, fall 2024)
    - Mr. David Torres (fall 2023, spring 2023, fall 2024)
    - Mr. Tanner Paul (summer 2024, fall 2024)

Past Mentees (TAMU)

- Postdocs:
    - Dr. Satheesh Vanaparthi (2024-2025, now at Texas A&M)
    - Dr. Mohd Avais (2023-2025, joint with Jodie Lutkenhaus)
    - Dr. Peiran Wei (2019-2022, now at Texas A&M)
    - Dr. Niradha Sachinthani (2020-2022, now at Dupont)
    - Dr. Miao Qi (2020-2021, now at Lawrence Berkeley National Lab)
    - Dr. Elizabeth Jergens (2023-2024, now at Wright Patterson Air Force Base)
    - Dr. Ananya Banik (2023-2024, joint with Dave Powers)
- PhD students
    - Dr. Luma Al-Mahbobi (2022-2025, MSEN)
    - Dr. Chia-Min Hsieh (2021-2025, CHEM)

- Dr. Evan Fox (2021-2025, CHEM)
- Dr. Nicholas Starvaggi (2021-2025, CHEM, now at TRI Austin)
- Dr. Cameron Taylor (2020-2024, MSEN, now at Intel)
- Dr. Randinu Pulukkody (2019-2024, CHEM, now at Navy Research Lab)
- Dr. Huaxian Cao (2019-2023, CHEN, joint with Micah Green, now at Advanced Materials)
- Dr. Ciera Cipriani (2019-2023, MSEN, now at Intel)
- Dr. Sarah Lak (2019-2023, CHEM, now at 3M)
- Dr. Yifei Wang (2019-2023, MSEN, now at Penn State)
- Mr. Houston Smith (2022-2025, chemistry)
- Gianni Spencer (2021-2022, CHEM)
- Ricardo Del Rio (2022-2023, CHEM)
- Kristin McCormick (2022-2023, MSEN)

- Masters students
  - Greeshma Raghuvaran (2021- 2023, MSEN)
  - Samanvaya Gaur (2019-2021, MSEN)
- Undergraduate students
  - Mr. Jose Cortes (fall 2023)
  - Ms. Athena Butler-Christodoulou (spring 2022, fall 2022, spring 2023, PhD student at University of Chicago)
  - Mr. Bradley Robinson (fall 2022)
  - Mr. Jordan Prices (fall 2021, spring 2022, fall 2022, spring 2023)
  - Ms. Kortney Tooker (spring, fall 2020; spring, fall 2021, spring 2022)
  - Mr. Joseph Duran (fall 2021)
  - Mr. Ethan Hammond (fall 2021)
  - REU: Sophia Gospodinova (2022, Rose Hulman)
  - REU: Julia LaBlanc (2022, Swarthmore College)
  - Ms. Khamila Quevedo (fall 2020, spring 2021)
  - Mr. Oliver Martinez (fall 2020, spring 2021)
  - Mr. Amin Bello Abdullah (fall 2020)
  - Ms. Eva Short (spring 2020)
  - Mr. Aidan Gregory (fall 2023)

Past Mentees (CWRU)

- Postdocs:
  - Dr. Brendan McGrail (2013-2015, now at Sartomer)
  - Dr. Al de Leon (2016-2017, now at ThermoFisher)
- PhD students:
  - Dr. Katelynn Edgehouse (2017-2022, now at Milliken)
  - Dr. Maria Escamilla (2018-2021)
  - Dr. Sarah Mitchell (2016-2021, now Braskem)
  - Dr. Kevin Pachuta (2016-2019)
  - Dr. Qinmo Luo (2014-2019, now at Merck)
  - Dr. Peiran Wei (2013-2019, now at Texas A&M)
  - Dr. Yuanhui Xiang (2013-2019, now at Penn State)
  - Dr. Rachael Matthews (2013-2018, now at ColorTech)
  - Dr. Brad Rodier (2013-2017, now at Rochal Industries)
  - Bowen Li (2017-2018, transferred to group of Prof. Greg Tochtrop, CWRU)

- MS Students:
  - Dr. Yifei Wang (2017-2019)
  - Houming Leng (2017-2019)
  - Dr. Nolan Kovach (2017-2018, PhD from Colorado School of Mines chemistry)
  - Bowen Li (2014-2017, now PhD student at CWRU chemistry)
  - Dr. Qinmo Luo (2014-2016)
- Undergraduate Students:
  - Alison Kennedy (summer 2020, joint with Prof. Chris Wirth)
  - Krista Schoonover (summer 2020, joint with Prof. Daniel Lambrecht, now PhD student at Texas A&M)
  - Christina Hemmingsen (2016-2019, summer 2020, now PhD student at Northwestern)
  - Madelyn McMillen (2018-2019)
  - Alexis Amburgey (2018-2019)
  - Hobart Chen (2018-2019)
  - David Yan (2018-2019, now MD/PhD student at Northwestern)
  - John Kwon (2016-2018)
  - Dr. Paul Advincula (2016-2018, now PhD student at Rice Chemistry)
  - Emily Glasser (2015-2018, now in Law School)
  - Spencer Burton (2013-2017, now PhD student at Northwestern University)
  - Dr. Eric Mosher (2013-2017, now postdoc at Case Western Reserve University)
  - Blaise Whitesell (2016-2017)
  - Dr. Taylor Frey (2015-2017)
  - Dr. Riki Drout (2014-2016)
  - Tyler Densmore (2014-2016, now MD student at Ohio University)
  - Emily Young (2013-2016, now MD student at Dartmouth)
  - Hayley Yocum (2016)
  - Dr. Jordan Swisher (2013-2015, now postdoc at Northwestern University)
  - Edward Peng (2013-2015, now MD student at Indiana University)
  - Mar Tickerhoof (2014-2015)
  - Denny Chen (2014-2015, joint with Mohan Sankaran in Chemical Engineering)
  - Dr. Kelly Peterson (2013-2015, joint with Roger French in Materials Science, now postdoc at PNNL)
  - Jennifer Tang (2014-2015, joint with Alp Sehirlioglu in Materials Science)
- REU Students:
  - Michael Lu-Diaz (2017, now PhD student in chemistry at UMass Amherst)
  - Michael Mellon (2016)
  - Laura Alfonso (2016, now PhD student in chemistry at University of Illinois Chicago)
  - Laura Abelquist (2015)
  - Dr. Anna Davies (2015, PhD in chemistry from Northwestern)
- High school students:
  - Louisa Wang (2018-2019)
  - RhayAuna Dent (summer 2017, 2018 through ACS SEED program)
  - Jaylen Williams (summer 2016, 2017 through ACS SEED program, now UG biology major at Miami University, Ohio)
  - Fisher Ilijasic (summer 2017)
  - Stasha Vaden (summer 2015, through ACS SEED program)

- Daphney Bonner (summer 2014, 2015, through ACS SEED program, 2016, now UG biology major at Howard University)
- Kim Gliebe (2013-2014, chemical engineering BS at UDayton, now PhD student at CWRU in Materials Science)
- Jillian Wilkerson (2013-2014)

Committee Member

- **Chemistry (TAMU)**
  - Chandeni Kassen (Wooley Group)
  - Kelechi Festus (Zhao Group)
  - Yunchong Yang (Wooley Group)
  - Guanghua Yu (Fang Group)
  - Mary Yeneca (Michaudel Group)
  - Kathleen Floyd (Batteas Group)
  - Carolina Martinez (M. Grunlan Group)
  - Abigail Moody (Tabor Group)
  - Ashely Braaksma (Wooley Group)
  - Jeanette Pina (Thomas Group)
  - Dr. Rahym Ashirov (Blumenthal Group)
  - Octavio Miranda (Fang Group)
  - Ami Patel (Wooley Group)
  - Mingwa Leng (Fang Group)
  - Jiun Wei Wu (Michaudel Group)
  - Dr. Natalie Vest (PhD 2023, J. Grunlan Group)
  - Dr. Tiffany Sill (PhD 2025, Banerjee Group)
  - Dr. Sarah Hancock (PhD 2023, Michaudel Group)
  - Dr. Brandon Frey (PhD 2023, Powers Group)
  - Dr. Hsu-Cheng Chiang (PhD 2022, J. Grunlan Group)
  - Dr. Chris Komatsu (PhD 2020, Wooley Group)
  - Ryan Kulow (MS 2020, Michaudel Group)
- **Chemical Engineering (TAMU)**
  - Chen Wang (Lutkenhaus Group)
  - Khirabdhi Mohanty (Lutkenhaus Group)
  - Dr. Ratul Thakur (Lutkenhaus Group, PhD 2024)
  - Dr. Yifei Yang (Elabd Group, PhD 2023)
  - Dr. Kevin Nixon (PhD 2023, Elabd Group)
  - Dr. Khailash Dhondiram Arole (MS 2021, PhD 2024, Green Group)
  - Bhargavi Bhat (MS 2020, Akbulut Group)
- **Materials Science and Engineering (TAMU)**
  - Xingkang She (Kolluru Group)
  - Junho Moon (Sukhishvili Group)
  - Taeseung Hwang (Hsiao Group)
  - Denali Ibbotson (Shamberger Group)
  - Sasha George (Ware Group)
  - Revati Kelkar (Radovic Group)
  - Dr. Kartik Kumar Rajagopalan (Sukhishvili Group, PhD 2024)
  - Juanita Pombo (MS 2023, Tamamis Group)

  - Dr. Aliaksei Aliakseyeu (Sukhishvili Group, PhD 2023)
  - Dr. Xiuzhu Zhu (Su Group, PhD 2023)
  - Yinan Yang (MS 2023, Luktenhaus Group)
  - Dr. Qing Zhao (Sukhishvili Group, PhD 2022)
  - Dr. Mingzhen Zhao (Su Group, PhD 2022)
  - Dr. Alexandra Easley (Lutkenhaus Group, PhD 2022)
  - Dr. Raman Hlusko (Sukhishvili Group, PhD 2021)
  - Dr. Chia-Ying Tsai (Su Group, PhD 2021)
  - Dr. Parvin Karimineghlani (Sukhishvili Group, PhD 2020)
- **Biomedical Engineering (TAMU)**
  - Joseph Duran (Alge Group)
- **Mechanical Engineering (TAMU)**
  - Alexandria Trevino (Wilkerson Group)
  - Pratyusa Kar (Benjamin Group, MS 2021)
- **Chemistry (CWRU)**
  - Angel Placeres-Beltran (Tochtrop Group)
  - Jayvic Jiminez (Sauve Group, PhD 2021)
  - Chunlai Wang (Sauve Group, PhD 2019)
  - Regina DiScipio (Crespo Group, PhD 2018)
  - Sandra Pejic (Sauve Group, PhD 2018)
  - Christopher McCleese (Berda Group, PhD 2016)
  - Andrew Kollar (chair, Pratasewicz Group, MS 2016)
- **Other Departments (CWRU)**
  - Dr. Benjamin Hirt (Materials Science and Engineering, Sehirlioglu group, PhD 2024)
  - Xiaolong Lang (Macromolecular Science and Engineering, Hore group, PhD 2018)
  - Symone Cook (Macromolecular Science and Engineering, Korley group, PhD 2018)
  - Melanie Hutnik (Macromolecular Science and Engineering, Pokorski group, PhD 2017)
  - Mingze Sun (Macromolecular Science and Engineering, Rowan group, PhD 2017)
  - Lindsey Montak (Macromolecular Science and Engineering, Korley group, PhD 2017)
  - Joey Magdalena (Macromolecular Science and Engineering, Advincula group, PhD 2016)
  - Brian Michal (Macromolecular Science and Engineering, Rowan group, PhD 2016)
  - Qiong Wu (Macromolecular Science and Engineering, Rowan group, PhD 2016)
  - Abdulkerim Gok (Materials Science and Engineering, French group, MS 2015)

Courses Taught

At Texas A&M

- CHEM227: Organic Chemistry I (Fall 2020, 2024)
- CHEM231: Spectroscopy of Organic Compounds (Fall 2023)
- CHEM489/689: Non-Traditional Polymer Chemistry (Spring 2022)
- MSEN250: Soft Matter (Spring 2020, 2021, 2022, 2023; Fall 2024)
- MSEN420: Polymer Science (Fall 2019)
- MSEN489/689: Characterization of Polymeric Materials, co-instructor (Spring 2021, 2022)
- MSEN489/689: Non-Polymeric Soft Matter (new course development: Fall 2021)
- Guest Lecturer:
  - MSEN 301: Unified Materials Lab I (Spring 2020)
  - MSEN205: Materials in Society (Fall 2020, 2021, 2022, 2023, 2024)

- CHEM289: Transfer Learning Community (Fall 2024)

During time at CWRU

- CHEM435: Synthetic Methods in Organic Chemistry (Fall 2013, 2014, 2017)
- CHEM398: Senior Capstone in Chemistry (Spring 2014, 2016, 2018)
- CHEM397: Undergraduate Independent Research (Fall 2013,2014, 2015, 2016, 2017, 2018; Spring 2014, 2015, 2016, 2018)
- CHEM324: Organic Chemistry (Spring 2014, 2015, 2016)
- CHEM323: Organic Chemistry (Fall 2015, 2016, 2017, 2018)
- Guest lecturer:
  - CHEM316/416: Frontiers in Inorganic Chemistry (Spring 2016)
  - USNA288S: Silicon: From Sand to Smartphone (Spring 2016, 2017)

Research Support

Current Funding

- *Unraveling the Effects of Self-Doping in Redox Active Polymers* (NSF Chemistry MSN, as PI)
  - 2025-2028; $642,571
- *Collaborative Research: DMREF:NSF-DST: Accelerated Development of Polymer Salogels* (NSF, as co-PI, lead PI: Svetlana Sukhishvili)
  - 2025-2029; $1,600,000
- *Polymerizations at Interfaces and in Interphases* (NSF DMR Polymers, as sole PI)
  - 2025-2028; $465,000
- *Collaborative Research: Linking Structure with Transport in Graphene-Based Films at Fluid-Fluid Interfaces* (NSF, with Joe Samaniuk (Colorado School of Mines))
  - 2024-2027; $290,000
- *Polymer-enabled Cold Sintering for Inverse Composites* (ACS PRF, as sole PI)
  - 2025-2027; $125,000
- DOE Energy Frontier Research Center: *Breakthrough Electrolytes for Energy Storage 2* (DOE, as Thrust Lead, lead PI Robert Savinell, CWRU).
  - 2022-2026; $12,000,000
- *Precise Control of Redox-Active Macromolecular Microstructure via Polymerization-Induced Self-Assembly for High Energy Density Redox Flow Batteries* (TAMU-LANL Collaborative Grant, as sole PI)
  - 2022-2026; $435,000

Completed Funding

- *Rigid Rod Polymers via Group Transfer Polymerization* (Welch Foundation, as sole PI)
  - 2022-2025; $300,000
- *Conference: Future Faculty Workshop: Preparing Diverse Leaders for the Future, Summers of 2022-2025* (NSF Crosscutting Activities in Materials, as sole PI)
  - 2022-2025; $297,876 (Terminated by Federal Government)
- *Chemical Control of Plastic Crystals for Tunable Thermal Energy Storage* (ONR, as co-PI, PI Patrick Shamberger)
  - 2022-2025; $497,299

- *Spatially Defined Radical-Containing Polymers for Enhanced Charge Transport* (NSF MSN, as PI; co-PI: Jodie Lutkenhaus, TAMU CHEN, Award #2104179)
    - 2021-2025; $570,000
- *EFRI DCheM: Next-generation Low Global Warming Refrigerants* (NSF, as co-PI, PI Mark Shiflett at University of Kansas)
    - 2020-2025; $2,000,000
- *Architected Composites for Direct Air Capture of CO_2 and Low Energy Regeneration* (Total Energies, as sole PI)
    - 2024-2025; $275,000
- *From Structured Solvents to Hybrid Materials for Chemically Selective Separation of CO_2: Mechanisms, Stability, and Interfaces* (DOE, as co-PI, PI Burcu Gurkan at CWRU)
    - 2021-2024; $2,000,000
- *Polymer-Based Capsules of Active Liquids Templated by Non-Aqueous Emulsions* (NSF DMR, sole PI; Award #2103182)
    - 2021-2024; $417,688
- *Compact Thermal Energy Storage Rapid Prototyping Custom Phase Change Heat Exchanger Leveraging Metal Matrix Composites for Thermal Energy Storage* (ONR SBIR, with TRI Austin)
    - 2022-2023; $75,000
- *Salt Hydrate Eutectic Thermal Energy Storage for Building Thermal Regulation* (DOE, as co-PI, PI Patrick Schamberger at TAMU)
    - 2020-2023; $3,000,000
- *CAREER: Asymmetric Functionalization of 2-D Nanomaterials for Tailored Assemblies* (NSF DMR, Award #1551943)
    - 2016-2021; $550,000
- *Collaborative Research: Next Generation Rigid Rod Materials through Combined Computation and Experimentation* (NSF Chemistry, MSN, collaborator: Daniel Lambrecht, FGCU Chemistry, Award #1953628)
    - 2018-2021; $335,861
- *Exploiting Small Molecule Building Blocks to Architect Polymers with Enhanced Performance as Dielectric Materials* (American Chemical Society: New Directions)
    - 2019-2021; $110,000
- *Synthetic Control of Radical Systems using Nanomaterial Surfaces: Coupled Ion and Electron Transfer* (Texas A&M Strategic Transformative Research Program, co-PI Jodie Lutkenhaus)
    - 2020; $50,860
- *Controlled Nanostructures of Atomically thin 2D Oxides for Next Generation Functional Materials* (AFOSR, lead PI Alp Sehirlioglu, CWRU Materials Science and Engineering)
    - 2017-2022; $1,203,583
- NSF REU: *Case Chemistry REU Site* (Co-PI, Grant #1359022)
    - 2015-2018; $212,519
- *A Radical Approach to Conjugated Polymers* (American Chemical Society, Doctoral New Investigator; Award #55563-DNI7)
    - 2015-2017; $110,000
- Energy Frontier Research Center: *Breakthrough Electrolytes for Energy Storage* (DOE, lead PI Robert Savinell, CWRU)
    - 2018-2022; $10,750,000