Curriculum Vitae
John B. Matson

Virginia Tech
Department of Chemistry
313B Davidson Hall
Blacksburg, VA 24061
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PROFESSIONAL POSITIONS

Virginia Tech — Blacksburg, VA
- Department of Chemistry, Associate Chair — 2022-present
- Professor of Chemistry — 2021-present
- *Dr. AC Lilly Jr.* Faculty Fellow of Nanoscience — 2020-present
- Associate Professor of Chemistry — 2018-2021
- Assistant Professor of Chemistry — 2012-2018

LEADERSHIP POSITIONS

Virginia Tech Department of Chemistry
- *Associate Department Chair* — 2022-present
- *Director of Graduate Admissions* — 2018-2022

International Union of Pure and Applied Chemistry (IUPAC)
- *Division IV (Polymer Division) Titular Member (elected)* — 2025-2026
- *Division IV (Polymer Division) Associate Member (elected)* — 2024-present
- *Division IV (Polymer Division) Titular Member (elected)* — 2020-2023
- *Secretary of Subcommittee on Polymer Terminology* — 2020-present

American Chemical Society (ACS)
- *POLY Division Treasurer (elected)* — 2024-present

GlycoMIP (Glycomaterials Innovation Platform NSF program)
- *Glycomaterials Engineering Interest Group leader* — 2024-present
- *Loop 1 co-leader* — 2020-2024

EDUCATION and TRAINING

Northwestern University — Chicago, IL
- *Postdoctoral Fellow* — 2009-2012
- Advisor: Samuel I. Stupp

California Institute of Technology — Pasadena, CA
- *Ph.D.* (defended Sept. 4, 2009; awarded June 10, 2010) — 2004-2009
- Advisor: Robert H. Grubbs
- Thesis: Applications and extensions of living ring-opening metathesis polymerization

Washington University in St. Louis — St. Louis, MO
- *A.B.* (awarded May 10, 2004) — 2000-2004
- Majors: Chemistry and German
- Summa Cum Laude
- Research Advisor: Karen L. Wooley

AWARDS/HONORS

- Teaching Excellence Award (Virginia Tech College of Science) — 2023
- Alan F. Clifford Faculty Service Award (Virginia Tech Department of Chemistry) — 2022
- Materials Today *European Polymer Journal* Award — 2022
- Dr. AC Lilly Jr. Faculty Fellowship in Nanoscience (Virginia Tech College of Science) — 2020
- Humboldt Research Fellowship for Experienced Researchers (Germany) — 2020

John C. Schug Research Award (Virginia Tech Department of Chemistry)	2019
Thieme Chemistry Journal Award	2019
Camille Dreyfus Teacher-Scholar Award	2018
ACS PMSE Division Young Investigator Award	2018
Virginia Tech nominee for SCHEV Rising Star Award (Commonwealth of Virginia)	2017
Jimmy W. Viers Teaching Award (Virginia Tech Department of Chemistry)	2016
NSF CAREER Award	2015
3M Non-Tenured Faculty Award	2015
Ralph E. Powe Junior Faculty Enhancement Award	2014
ACS Petroleum Research Fund Doctoral New Investigator Award	2014
NIH National Research Service Award (NRSA) Postdoctoral Fellowship	2011
Kemin Travel Award to ACS Meeting	2011
Baxter Early Career Development Fellowship Award in Bioengineering	2009
ACS POLY Division Excellence in Graduate Polymer Research Award	2009
NSF Travel Grant to NATO Advanced Study Institute	2008
Dow Travel Fellowship	2007

JOURNAL PUBLICATIONS (PEER-REVIEWED)

†denotes co-first author publications
*denotes corresponding author(s)

As PI at Virginia Tech

In review/In revision

123. Nuwayo, E. M.; Thompson, C.; Civiello, A.; DiMarco, A.; Zhang, J.; Lee, S.; Sung, G.; Das, T.; Zhang, Y.; Vu, C.; Koshak, S.; **Matson, J. B.**; Erdemir, A.; Goddard, W. A.*; Chen, X*.; Liu, G.* "Upcycling of Polyvinyl Chloride into Polyalphaolefin Lubricants" **2026**, *in revision*,

Accepted

122. Farrell, W.; Keddie, D.; Luscombe, C.; **Matson, J. B.***; Merna, J.; Moad, G.; Russell, G.; Sosa Vargas, L.; Theato, P.; Topham, P. "Basic Classification and Definitions of Polymerization Reactions (IUPAC Recommendations 2025)" *Pure Appl. Chem.*, **2026**, *accepted*.

In Press

121. Hiorns, R. C.*; Vohlídal, J.*; Boucher, R.; Chan, C. H.; Duhlev, R.; Fellows, C. M.; Hess, M.; Jones, R. G.; Kratochvíl P.; Luscombe, C. K.; **Matson, J. B.**; Moad, G.; Philippova, O.; Slomkowski, S.; Stingelin, N.; Théato, P.; Vairon, J. P.; Vert, M. "A Brief Guide to Polymer Terminology (IUPAC Technical Report)" *Pure Appl. Chem.*, **2025**, *in press*. doi: 10.1515/pac-2023-0304

Published

120. Kaloss, A. M.; Lyles, K.; Groot, N. A.; Zhu, Y.; Lin, Y.; Xie, H.; **Matson, J. B.**; Theus, M. H*. "Tie2-Dependent Mechanisms Promote Leptomeningeal Collateral Remodeling and Reperfusion Following Stroke" *Adv. Sci.*, **2026**, *13*, e05342. doi: 10.1002/advs.202505342.

119. Thompson, J. E.; **Matson, J. B.**; Edgar, K. J.* "Well-Defined Polysaccharide Graft (Co)polymers: Synthesis, Applications, and Structure-Property Relationships " *Prog. Polym. Sci*. **2026**, 102057. doi: 10.1016/j.progpolymsci.2025.102057

118. Addo, I. Steele, A. Q.; **Matson, J. B.*** "Structure-Property Relationships in Poly(olefin sulfone) Copolymers and Terpolymers Derived from Linear and Cyclic Alkenes" *Polym. Chem.* **2026**, *17*, 171-179. doi: 10.1039.d5py00859j

117. Kropp, G.; Dietzenbach, R; Reiter, P; Muller, H; Steele, A.; Savage, A.; Archer, W.; **Matson, J. B.**; Bortner, M.; Williams, C.; Schulz, M. D.* "Structure-Property Relationships of Acrylate-Terminated Polybutadiene as a Photocurable Elastomer for Additive Manufacturing" *Chem. Mater.* **2025**, *37*, 9849-9857. doi: 10.1021/acs.chemmater.5c02289

116. Li, Z.; Tousian, B.; Zaiden, M.; Sarkar, I.; Vu, C.; Wang, Y.; Bitton, R.; **Matson, J. B.*** "Cellular uptake and anti-oxidant activity of H_2S-releasing tetrapeptide supramolecular polymer nanostructures" *ACS Mater. Lett.*, **2025**, *7*, 3141-3149. doi:10.1021/acsmaterialslett.5c00921

115. Swilley, S. N.; Wu, H.; Tomasina, C.; Moroni, L.; Wieringa, P.; Baker, M. B.; **Matson, J. B.*** "Electrospun polymer fiber mats for persulfide prodrug delivery" *Biomacromolecules*, **2025**, *26*, 6057-6069. doi: 10.1021/acs.biomac.5c00975

114. Verma, R.; Fu, M.; Arif, H. M.; Yang, G.; Sarkar, I.; Kaur, K. **Matson, J. B.;** Wu, L*.; Wang. R.* "Localized delivery and retention of hydrogen sulfide causing regional lipid accumulation in mouse adipose tissues in vivo" *Commun Biol*. **2025**, *8*, 963. doi: 10.1038/s42003-025-08353-9

113. Firouzan, B.; Ghasemi, R.; Tetteh. M. T.; **Matson, J. B.**, Kashfi. K.* "NOSH-aspirin (NBS-1120) attenuates motor defects and dopaminergic neuron degeneration in a rat model of Parkinson's disease" *Eur. J. Pharmacol*. **2025**, *1002*, 177733. doi: 10.1016/j.ejphar.2025.177733

112. Vu, C.; Abu Amara, N.; Alaboalirat, M.; Nativ-Roth, E.; Zalk, R.; Leite, W.; Carrillo, J.-M.; Bitton, R.; **Matson, J. B.*** "Aqueous self-assembly of cylindrical and tapered bottlebrush block copolymers" *Angew. Chem. Int. Ed.* **2025**, *64*, e202500771. doi: 10.1002/anie.202500771
Also on ChemRxiv at https://doi.org/10.26434/chemrxiv-2024-0p5j1
**Selected as an *Angewandte Chemie* 'Hot Paper'

111. Chinn, A. F.; Farzeen, P.; Li, Z.; Mase, J. D.; Vu, C.; Schulz, M. D.; Deshmukh, S. A.*; **Matson, J. B.***. "Dextran-*block*-Poly(benzyl glutamate) Block Copolymers via Aqueous Polymerization-Induced Self-Assembly" *Carbohydr. Polym*. **2025**, *352*, 123186. doi: 10.1016/j.carbpol.2024.123186

110. Li, Z.; Thomas, M.; Berac, C.; Besenius, P.*; **Matson, J. B.*** "Regulating H_2S Release from Self-Assembled Peptide H_2S-Donor Conjugates Using Cysteine Derivatives" *Org. Biomol. Chem.*, **2024**, *22*, 8173-8181. doi: 10.1039/d4ob01148a.

109. Boase, N.; Gillies, E.*; Goh, R.; Kieltyka, R.; **Matson, J. B.**; Meng, F.; Sanyal, A.; Sedláček, O. "Stimuli-responsive polymers at the interface with biology" *Biomacromolecules*, **2024**, *25*, 5417-5436. doi: 10.1021/acs.biomac.4c00690

108. Chinn, A. F.; Williams, N. R.; Miller, K. M.; **Matson, J. B.*** "Polysaccharide-based H_2S donors: Thiol-ene Functionalization of Amylopectin with H_2S-releasing *N*-thiocarboxyanhydrides" *J. Poly Sci*. **2024**, *62*, 4155-4164. doi: 10.1002/pol.20240262

107. dos Reis, R. A.; Sarkar, I.; Rodrigues, M. G.; Matson, J. B.; Kashfi, K.* "NO- and H_2S-releasing nanomaterials: A crosstalk signaling pathway in cancer" *Nitric Oxide*, **2024**, *151*, 17-30.

106. Chinn, A. F.; Trinidade Coutinho, I.; Kethireddy, S. R.; Williams, N. R.; Knott, K. M.; Moore, R. B.; Matson, J. B. "Ethyl Cellulose-*block*-Poly(benzyl glutamate) Block Copolymer Compatibilizers for Ethyl Cellulose/Poly(ethylene terephthalate) Blends" *Polym. Chem.*, **2024**, *15*, 3501-3509. doi: 10.1039/d4py00688g.

105. Zhai, Z.; Zhou, Y.; Sarkar, I.; Liu, Y.; Yao, Y.; Zhang, J.; Bortner, M. J.; **Matson, J. B**.; Johnson, B. N.; Edgar, K. J.* "Synthesis and real-time characterization of self-healing, injectable, fast-gelling hydrogels based on multi-reducing end polysaccharides (MREPs)" *Carb. Polym.* **2024**, *338*, 122172. doi: 10.1016/j.carbpol.2024.122172

104. Campbell, R.; Buchbinder, N.; Szwetkowski, C.; Piedl, K.; Zhu, Y.; Truong, M.; **Matson, J. B.**; Santos, W. L.*; Mevers, E.* "Design, synthesis, and antifungal activity of 3-substituted-2(5H)-Oxaboroles" *ACS Med. Chem. Lett.* **2024**, *15*, 349-354. doi: 10.1021/acsmedchemlett.3c00463

103. Liu, J.; Blosch, S. E.; Volokhova, A. S.; Crater, E. R.; Gallin, C. F.; Moore, R. B.; **Matson, J. B.*;** Byers, J. A.* "Using Redox Switchable Polymerization Catalysis to Synthesize a Chemically Recyclable Thermoplastic Elastomer" *Angew. Chem. Int. Ed*. **2024**, *63*, e202317699. doi: 10.1002/anie.202317699

102. **Matson, J. B.***; Steele, A. Q.; Mase, J. D.; Schulz, M. D.* "Polymer Characterization by Size-Exclusion Chromatography with Multi-Angle Light Scattering (SEC-MALS): A Tutorial Review" *Polym. Chem.* **2024**, *15*, 127-142. doi: 10.1039/d3py01181j
**One of the top 30 most cited/most downloaded articles in *Polymer Chemistry* in 2023

101. Sarkar, S.; Kumar, R.; Matson, J. B.* "Hydrogels for gasotransmitter delivery: Nitric oxide, carbon monoxide, and hydrogen sulfide" *Macromol. Biosci.* **2024**, *1*, 2300138. doi: 10.1002/mabi.202300138
**_Macromolecular Bioscience_ special issue on Therapeutic Hydrogels
**Selected as an Editors Choice article for the Polymer Portfolio
**A *Macromolecular Bioscience* most-viewed paper in 2023 (top 10%)

100. Alaboalirat, M.; Scannelli, S. J.; Rahmaninejad, H.; Carrillo, J.-M.; Do, C.; **Matson, J. B.***; Ashkar, R.* "Solution structure and scaling laws of cylindrical and tapered bottlebrush polymers" *Macromolecules*, **2023**, *56*, 9264-9276. doi: 10.1021/acs.macromol.3c01412

99. Scannelli, S. J.; Alaboalirat, M.; Troya, D.; **Matson, J. B.*** "Ring-opening metathesis polymerization of norbornene-benzoladderene (macro)monomers" *Polym. Chem.* **2023**, *14*, 4726-4735. doi: 10.1039/d3py00981e

98. Cash, A.; de Jager, C.; Brickler, T.; Soliman, E.; Kaloss, A. M.; Zhu, Y.; Pridham, K. J.; Mills, J.; Ju, J.; Basso, E. K. G.; Chen, M.; Johnson, Z.; Sotiropoulos, Y.; Wang, X.; Xie, H.; **Matson, J. B.**; Theus, M. H.* "Endothelial-deletion of EPH receptor A4 alters single cell profile and Tie2/Akap12 signaling to preserve blood-brain barrier integrity" *Proc. Natl. Acad. Sci. U.S.A.* **2023**, *120*, e2204700120. doi: 10.1073/pnas.2204700120

97. Zhu, Y.[†]; Shmidov, Y.[†]; Harris, E. A.; Theus, M. H.; Bitton, R.*; **Matson, J. B.*** "Activating hidden signals by mimicking cryptic sites in a synthetic extracellular matrix" *Nat. Commun.* **2023**, *14*, 3635. doi: 10.1038/s41467-023-39349-w

96. Scannelli, S. K.; Alaboalirat, M.; Troya, D.; **Matson, J. B.*** "The influence of the norbornene anchor group in Ru-mediated ring-opening metathesis polymerization: Synthesis of bottlebrush polymers" *Macromolecules*, **2023**, *56*, 3838-3847. doi: 10.1021/acs.macromol.3c00214

95. Scannelli, S. J.; Paripati, A.; Weaver, J. R.; Alaboalirat, M.; Troya, D.; **Matson, J. B.*** "The influence of the norbornene anchor group in Ru-mediated ring-opening metathesis polymerization: Synthesis of linear polymers" *Macromolecules*, **2023**, *56*, 3848-3856. doi: 10.1021/acs.macromol.3c00172

94. Swilley, S. N.; Zajkowski, E. M.; **Matson, J. B.*** "Poly(Piloty's Acid): A Slow Releasing Macromolecular HNO Donor" *Polym. Chem.* **2023**, *14*, 2572-2576. doi: 10.1039/d2py01339h

93. Li, Z.; Joshi, S. Y.; Wang, Y.*; Deshmukh, S. A.*; **Matson, J. B.*** "Enzymatic efficiency and selectivity regulated by supramolecular nanostructures" *Angew. Chem. Int. Ed.* **2023**, e202303755. doi: 10.1002/anie.202303755

92. Zhu, Y.; Archer, W. R.; Morales, K. F.; Schulz, M. D.; Wang, Y.*; Matson, J. B.* "Enzyme-Triggered Chemodynamic Therapy via a Peptide–H_2S Donor Conjugate with Complexed Fe^{2+}" *Angew. Chem. Int. Ed.* **2023**, e202302303. doi: 10.1002/anie.202302303
**Selected as an *Angewandte Chemie* 'Hot Paper'
**An *Angewandte Chemie* most-viewed paper in 2023 (top 10%)

91. Kadlec, M.; Chinn, A. F.; Novy, P. Garcia-Vazquez, F. A.; Ros-Santaela, J. L.; **Matson, J. B.***; Pintus, E.* "*N*-thiocarboxyanhydrides, amino acid-derived enzyme-activated H_2S donors, enhance sperm mitochondrial activity in presence and absence of oxidative stress" *BMC Veterinary Research*, **2023**, *19*, 52. doi: 10.1186/s12917-023-03593-5

90. Fellows, C. M.; Jones, R. G.; Keddie, D. J.; Luscombe, C. K.; **Matson, J. B.**; Moad, G.*; Matyjaszewski, K.; Merna, J.; Nakano, T.; Penczek, S.; Russell, G. T.; Topham, P. D. "Terminology for chain polymerization (IUPAC Recommendations 2021)" *Pure. Appl. Chem.* **2022**, *94*, 1093-1147. doi: 10.1515/pac-2020-1211

89. Luscombe, C.K.;* Moad, G.;* Hiorns, R.C.; Jones, R. G.; Keddie, D. J.; **Matson, J. B**.; Merna, J.; Nakano, T.; Russell, G. T.; Topham, P. D. "A Brief Guide to Polymerization Terminology (IUPAC Technical Report)" *Pure. Appl. Chem.* **2022**, *94*, 1079-1084. doi: 10.1515/pac-2021-0115

88. Alaboalirat, M.; Vu, C.; **Matson, J. B.*** "Radical-Radical Coupling Effects in the Direct-Growth Grafting-Through Synthesis of Bottlebrush Polymers using RAFT and ROMP" *Polym. Chem.* **2022**, *13*, 5841-5851. doi: 10.1039/d2py00794k

87. Pose, M.; Dillon, K. M.; Denicola, A.; Alvarez, B. **Matson, J. B.**; Möller, M.*; Cuevasanta, E.* "Fluorescence detection of H_2S through the formation of pyrene excimers" *J. Biol. Chem.* **2022**, *298*, 102402. doi: 10.1016/j.jbc.2022.102402
**Highlighted as Editor's pick

86. Li, Z.; Zhu, Y.; **Matson, J. B.*** "pH-Responsive Self-Assembling Peptide-Based Biomaterials: Designs and Applications" *ACS Appl. Bio Mater*. **2022**, 5, 4635-4651. doi: 10.1021/acsabm.2c00188
**Invited review for Forum on Self-assembling Biomaterials from Proteins, Peptides, and DNA

85. Yao, T.; van Nunen, T.; Rivero, R.; Powell, C.; Carrazzone, R.; Kessels, L.; Wieringa, P. A.; Hafeez, S.; Wolfs, T. G. A. M.; Moroni, L.*; **Matson, J. B.***, Baker, M. B.* "Electrospun Scaffolds Functionalized with a Hydrogen Sulfide Donor Stimulate Angiogenesis" *ACS Appl. Mater. Interfaces*, **2022**, *14*, 28628-28638. doi: 10.1021/acsami.2c06686

84. Blosch, S. E.; Scannelli, S. J.; Alaboalirat, M.; **Matson, J. B.*** "Complex Polymer Architectures using Ring-Opening Metathesis Polymerization: Synthesis, Applications, and Practical Considerations" *Macromolecules*, **2022**, *55*, 4200-4227. doi: 10.1021/acs.macromol.2c00338
**Invited Perspective article

83. Blosch, S. E.; Alaboalirat, M.; Eades, C. B.; Scannelli, S. J.; **Matson, J. B.*** "Solvent effects in grafting-through ring-opening metathesis polymerization" *Macromolecules*, **2022**, *55*, 3522-3532. doi: 10.1021/acs.macromol.2c00254

82. Cornell, H. D.; Zhu, Y; Ilic, S.; Lidman, N. E.; Yang, X.; **Matson, J. B.**; Morris, A. J.* "Green Light Responsive Metal-Organic Frameworks for Colorectal Cancer Treatment" *Chem. Commun*. **2022**, *58*, 5225-5228. doi: 10.1039/D2CC00591C

81. Chan, C. H.; Chen, J.-T.; Farrell, W.; Fellows, C.; Keddie, D.; Luscombe, C.; **Matson, J***.; Merna, J.; Moad, G.; Russell, G.; Théato, P.; Topham, P. Sosa-Vargas, L. "Reconsidering Terms for Mechanisms of Polymer Growth: The 'Step-Growth' and 'Chain-Growth' Dilemma" **2022**, *13,* 2262-2270. doi: 10.1039/d2py00086e.
**Named *Polymer Chemistry* Paper of the Month for April 2022
**Selected as a *Polymer Chemistry* 'Hot Paper' in July 2022
***Polymer Chemistry* Most Popular 2022

80. Li, Y.; Zhang, M.; Han, H.; Zhang, B.; **Matson, J. B**.; Chen, D.; Wang, Y.* "Peptide-based supramolecular photodynamic therapy systems: From rational molecular design to effective cancer treatment" *Chem. Eng. J.* **2022**, *436*, 135240. doi: 10.1016/j.cej.2022.135240

79. Alaboalirat, M.; **Matson, J. B.*** "Poly(β-Cyclodextrin) Prepared by Ring-Opening Metathesis Polymerization Enables Creation of Supramolecular Polymeric Networks" *ACS Macro Lett.*, **2021**, *10*, 1460-1466. doi: 10.1021/acsmacrolett.1c00590

78. Carrazzone, R. J.; Li, X.; Foster, J. C.; Wall, C. E.; Esker, A. R.; Madsen, L. A.*; **Matson, J. B.*** "Strong Variation of Micelle–Unimer Coexistence as a Function of Core Chain Mobility" *Macromolecules*, **2021**, *54*, 6975-6981 doi: 10.1021/acs.macromol.1c00635

77. Dillon, K. M.; **Matson, J. B.*** "A review of chemical tools for studying small molecule persulfides" *ACS Chem. Biol.* **2021**, *16*, 1128-1141. doi: 10.1021/acschembio.1c00255

76. Kaur, K.; Enders, P.; Powell, C. R.; Kashfi, K.; **Matson, J. B.*** "Amino acid-based H_2S Donors: *N*-thiocarboxyanhydrides that release COS/H_2S with innocuous by-products" *Chem. Commun.* **2021**, *57*, 5522-5525. doi: 10.1039/d1cc01309b

75. Dillon, K. M.; Morrison, H. A.; Powell, C. R.; Carrazzone, R. J.; Ringel-Scaia, V. M.; Winckler, E. W.; Council-Trouche, R. M.; Allen, I. C.*; **Matson, J. B.*** "Targeted delivery of persulfides to the gut: Effects on the microbiome" *Angew. Chem. Int. Ed.* **2021**, *60*, 6061-6067. doi: 10.1002/anie.202014052
**Selected as an *Angewandte Chemie* 'Hot Paper'
**Highlighted by ChemViews Magazine "Reactive Sulfur Species for a Healthy Gut" Mar. 1, 2021

74. Wang, Y.; Li, Z.; Shmidov, Y.; Carrazzone, R. J.; Bitton, R.; **Matson, J. B.*** "Crescent-shaped supramolecular tetrapeptide nanostructures" *J. Am. Chem. Soc.* **2020**, *142*, 20058-20065. doi: 10.1021/jacs.0c09399

73. Poudel, D; Swilley-Sanchez, S.; O'Keefe, S.; **Matson, J. B.**; Long, T.; Fernández-Fraguas, C.* "Novel electrospun pullulan fibers incorporating hydroxypropyl-β-cyclodextrin: Morphology and relation with rheological properties" *Polymers* **2020**, *12*, 2558. doi: 10.3390/polym12112558

72. Carrazzone, R. J.; Foster, J. C.; **Matson, J. B.*** "Tuning small molecule release from polymer micelles: Varying H_2S release through cross linking in the micelle core" *Eur. Polym. J.* **2020**, *141*, 110077. doi: 10.1016/j.eurpolymj.2020.110077
**2020 Materials Today *European Polymer Journal* Award winner

71. Wang, Y.; An, Y.; Shmidov, Y.; Bitton, R.; Deshmukh, S. A.; **Matson, J. B.*** "A combined experimental and computational approach reveals how aromatic peptide amphiphiles self-assemble to form ion-conducting nanohelices" *Mater. Chem. Front.*, **2020**, *4*, 3022-3031. doi: 10.1039/d0qm00369g

70. Wang, Y.; Dillon, K. D.; Li, Z.; Winckler, E. W.; **Matson, J. B.*** "Alleviating cellular oxidative stress through treatment with superoxide-triggered persulfide prodrugs" *Angew. Chem. Int. Ed.* **2020**, *59*, 16698-16704. doi: 10.1002/anie.202006656
**Promoted as a Hot Topic in Drug Delivery by *Chemistry Europe*

69. Shmidov, Y.[†]; Zhu, Y.[†]; **Matson, J.B.***; Bitton, R.* "Effect of Crosslinker Topology on Enzymatic Degradation of Hydrogels" *Biomacromolecules*, **2020**, *21*, 3279-3286. doi: 10.1021/acs.biomac.0c00722

68. Dillon, K. M.; Carrazzone, R. J.; **Matson, J. B.***; Kashfi, K.* "The evolving landscape for cellular nitric oxide and hydrogen sulfide delivery systems: A new era of customized medications" *Biochem. Pharmacol.* **2020**, *176*, 113931. doi: 10.1016/j.bcp.2020.113931.

67. Wang, Y.; Yang, X.; Liu, T.; Li, Z.; Leskauskas, D.; Liu, G.; **Matson, J. B.*** "Molecular-level control over plasmonic properties in silver nanoparticle/self-assembling peptide hybrids" *J. Am. Chem. Soc.*, **2020**, *142*, 9158-9162. doi: 10.1021/jacs.0c03672
**Highlighted in a virtual issue on chiral plasmonics in J. Phys. Chem. C. doi: 10.1021/acs.jpcc.1c03401

66. Qian, Y.; Altamimi, A.; Alston, S. Y.; Sarkar, S.; Cochran, M.; Zhou, M.; Levi-Polyachenko, N.*; **Matson, J. B.*** "H_2S-Releasing Amphiphilic Dipeptide Hydrogels Are Potent *S. aureus* Biofilm Disruptors" *Biomater. Sci.* **2020**, *8*, 2564-2576. doi: 10.1039/d0bm00241k.

65. Dillon, K. M.; Carrazzone, R. J.; Wang, Y.; Powell, C. R.; **Matson, J. B.*** "Polymeric persulfide prodrugs: Mitigating oxidative stress through controlled delivery of reactive sulfur species" *ACS Macro Lett.* **2020**, *9*, 606-612. doi: 10.1021/acsmacrolett.0c00118

64. Abetz, V.; Chan, C. H.; Luscombe, C. K.*; **Matson, J. B.**; Merna, J. Nakano, T.; Raus, G.; Russell, G. T.* "Quo Vadis, Macromolecular Science? Reflections by the IUPAC Polymer Division on the Occasion of the Staudinger Centenary" *Isr. J. Chem.* **2020**, *60*, 9-19. doi: 10.1002/ijch.201900182

63. Kaur, K.; Wang, Y.; **Matson, J. B.*** "Linker-Regulated H_2S Release from Aromatic Peptide Amphiphile Hydrogels" *Biomacromolecules*, **2020**, *21*, 3, 1171-1178. doi: 10.1021/acs.biomac.9b01600

62. Okyere, B.; Mills, W. A.; Wang, X.; Chen, M.; Chen, J.; Hazy, A.; Qian, Y.; **Matson, J. B.**; Theus, M. H.* "EphA4/Tie2 Crosstalk Regulates Leptomeningeal Collateral Remodeling Following Ischemic Stroke" *J. Clin. Investig*. **2020**, *130*, 1025-1035. doi: 10.1172/jci131493

61. Zhou, M.; Qian, Y.; Zhu, Y.; **Matson, J. B.*** "Elastase-triggered H_2S delivery from polymer hydrogels" *Chem. Commun.* **2020**, *56*, 1085-1088. doi: 10.1039/c9cc08752d

60. Volokhova, A.; Edgar, K. J.; **Matson, J. B.*** "Polysaccharide-containing block copolymers: Synthesis and applications" *Mater. Chem. Front.* **2020**, *4*, 99-112. doi: 10.1039/c9qm00481e

59. Kaur, K.[†]; Carrazzone, R. J.[†]; **Matson, J. B.*** "The Benefits of Macromolecular/Supramolecular Approaches in H_2S Delivery: A Review of Polymeric and Self-Assembled H_2S Donors" *Antioxid. Redox Signal.* **2020**, *32*, 79-95. doi: 10.1089/ars.2019.7864

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55. Yang, K.; Liu, Y.; Wang, Y.; Ren, Q.; Guo, H.; **Matson, J. B.**; Chen, X.; Nie, Z. "Enzyme-induced in-vivo assembly of gold nanoparticles for imaging-guided synergistic chemo-photothermal therapy of tumor" *Biomaterials* **2019**, *223*, 119460. doi: 10.1016/j.biomaterials.2019.119460

54. Powell, C. R.; Kaur, K.; Dillon, K. M.; Zhou, M.; Alaboalirat, M.; **Matson, J. B.*** "Functional N-substituted *N*-thiocarboxyanhydrides as Modular Tools for Constructing H_2S Donor Conjugates" *ACS Chem. Biol*. **2019**, *14*, 1129-1134. doi: 10.1021/acschembio.9b00248

53. Powell, C. R.; Foster, J. C.; Kaur. K.; Swilley, S. N.; Scannelli, S. J.; Troya, D.; **Matson, J. B.*** "Self-Amplified Depolymerization of Oligo(thiourethanes) for the Release of COS/H_2S" *Polym. Chem.* **2019**, *10*, 2991-2995. doi: 10.1039/c9py00354A
****Polymer Chemistry* Pioneering Investigators 2019 special issue*

52. Volokhova, A. S.; Waugh, J. B.; **Matson, J. B.*** "Effects of Graft Polymer Compatibilizers in Blends of Cellulose Triacetate and Polylactic Acid" *Polym. Int.* **2019**, *68*, 1263-1270. doi: 10.1002/pi.5820.
**Polymers for Biology, Medicine and Sustainability special issue

51. Arrington, K. J.; Haag, J. V.; French, E.; Murayama, M.; Edgar, K. J.; **Matson, J. B.*** "Toughening Cellulose: Compatibilizing Polybutadiene and Cellulose Triacetate Blends" *ACS Macro Lett.*, **2019**, *8*, 447-453. doi: 10.1021/acsmacrolett.9b00136

50. Foster, J. C.; Carrazzone, R. C.; Spear, N. J.; Radzinski, S. C.; Arrington, K. J.; **Matson, J. B.*** "Tuning H_2S Release by Controlling Mobility in a Micelle Core" *Macromolecules*, **2019**, *52*, 1104-1111. doi: 10.1021/acs.macromol.8b02315

49. Qian, Y.; Kaur, K.; Foster, J. C.; **Matson, J. B.*** "Supramolecular Tuning of H_2S Release from Aromatic Peptide Amphiphile Gels: Effect of Core Unit Substituents" *Biomacromolecules* **2019**, *20*, 1077-1086. doi: 10.1021/acs.biomac.8b0173

48. Shmidov, Y.[†]; Zhou, M.[†]; Yosefi, G.; Bitton, R.*; **Matson, J. B.*** "Hydrogels composed of hyaluronic acid and dendritic ELPs: Hierarchical structure and physical properties" *Soft Matter*, **2019**, *15*, 917-925. doi: 10.1039/c8sm02450b

47. Dillon, K. M.; Powell, C. R.; **Matson, J. B.*** "Self-Immolative Prodrugs: Effective Tools for the Controlled Release of Sulfur Signaling Species" *Synlett*, **2019**, *30*, 525-531. doi: 10.1055/s-0037-1611693

46. Alaboalirat, M.; Qi, L.; Arrington, K. J.; Qian, S.; Keum, J. K.; Mei, H.; Littrell, K. C.; Sumpter, B. G.; Carrillo, J-M, Y.; Verduzco, R.* **Matson, J. B.*** "Amphiphilic Bottlebrush Block Copolymers: Analysis of Aqueous Self-Assembly by Small Angle Neutron Scattering and Surface Tension Measurements" *Macromolecules*, **2019**, *52*, 465-476. doi: 10.1021/acs.macromol.8b02366

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**Selected as an ACS Editors' Choice article

44. Kaur, K.; Qian. Y.; Gandour R. D.*; **Matson, J. B.*** "Hydrolytic Decomposition of *S*-Aroylthiooximes: Effect of pH and *N*-Arylidene Substitution on Reaction Rate" *J. Org. Chem.* **2018**, *83*, 13363-13369. doi: 10.1021/acs.joc.8b02151

43. Arrington, K. J.; Radzinski, S. C.; Drummey, K. J.; Long, T. E.; **Matson, J. B.*** "Reversibly Crosslinkable Bottlebrush Polymers as Pressure-Sensitive Adhesives" *ACS Appl. Mater. Interfaces* **2018**, *10*, 26662-26668. doi: 10.1021/acsami.8b08480

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39. Radzinski, S.C.[†]; Foster, J. C.[†]; Scannelli, S. J.; Weaver, J. R.; Arrington, K. J.; **Matson, J. B.*** "Tapered Bottlebrush Polymers: Cone-shaped Nanostructures by Sequential Addition of Macromonomers" *ACS Macro Lett.* **2017**, *6*, 1175-1179. doi: 10.1021/acsmacrolett.7b00724

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**Invited submission to special issue in honor of Prof. Robert H. Grubbs

37. Dong, Y.; **Matson, J. B**.; Edgar, K. J. "Olefin Cross-metathesis in Polymer and Polysaccharide Chemistry: A Review" *Biomacromolecules* **2017**, *18*, 1661-1676. doi: 10.1021/acs.biomac.7b00364

36. Arrington, K. J.; Waugh, J. B.; Radzinski, S. C.; **Matson, J. B.*** "Photo- and Biodegradable Thermoplastic Elastomers: Combining Ketone-Containing Polybutadiene with Polylactide using Ring-Opening Polymerization and Ring-Opening Metathesis Polymerization" *Macromolecules*, **2017**, *50*, 4180-4187. doi: 10.1021/acs.macromol.7b00479

35. Foster, J. C.; Radzinski, S. C.; Zou, X.; Finkielstein, C. V.; **Matson, J. B.*** "H_2S-Releasing Polymer Micelles for Studying Selective Cell Toxicity" *Mol. Pharmaceutics* **2017**, *14*, 1300-1306. doi: 10.1021/acs.molpharmaceut.6b01117

34. Zhou, M.[†]; Shmidov, Y.[†]; **Matson, J. B.***; Bitton, R.* "Multi-Scale Characterization of Thermoresponsive Dendritic Elastin-Like Peptides" *Colloids Surf. B* **2017**, *153*, 141-151. doi: 10.1016/j.colsurfb.2017.02.014

33. Radzinski, S. C. [†]; Foster, J. C. [†]; Lewis, S. E.; French, E. V.; **Matson, J. B.*** "Factors Affecting Bottlebrush Polymer Synthesis by the Transfer-to Method Using Reversible Addition–Fragmentation Chain Transfer (RAFT) Polymerization" *Polym. Chem.* **2017**, *8*, 1636-1643. doi: 10.1039/c6py01982j

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**Invited submission to special issue on peptides and peptide conjugates in medicine

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30. Radzinski, S. C.[†]; Foster, J. C.[†]; Chapleski, R. C.; Troya, D.*; **Matson, J. B.*** "Bottlebrush Polymer Synthesis by Ring-Opening Metathesis Polymerization: The Significance of the Anchor Group" *J. Am. Chem. Soc.*, **2016**, *138*, 6998-7004. doi: 10.1021/jacs.5b13317

29. Arrington, K. J.; Murray, C. B.; Smith, E. C.; Marand, H.*; **Matson, J. B.*** "Precision Polyketones by Ring-Opening Metathesis Polymerization: Effects of Regular and Irregular Ketone Spacing" *Macromolecules*, **2016**, *49*, 3655-3662. doi: 10.1021/acs.macromol.6b00590

28. Radzinski, S. C.; Foster, J. C.; **Matson, J. B.*** "Preparation of Bottlebrush Polymers via a One-Pot Ring-Opening Polymerization (ROP) and Ring-Opening Metathesis Polymerization (ROMP) Grafting-Through Strategy" *Macromol. Rapid Commun*. **2016**, *37*, 616-621. doi: 10.1002/marc.201500672

27. Navon, Y.[†]; Zhou, M.[†]; **Matson, J. B.***; Bitton R.* "Dendritic Elastin-Like Peptides: The Effect of Branching on Thermoresponsiveness" *Biomacromolecules* **2016**, *17*, 262-270. doi: 10.1021/acs.biomac.5b01371

26. Foster, J. C.[†]; Radzinski, S. C.[†]; Lewis, S. E.; Slutzker, M. B.; **Matson, J. B.*** "Norbornene-Containing Dithiocarbamates for use in Reversible Addition-Fragmentation Chain Transfer (RAFT) Polymerization and Ring-Opening Metathesis Polymerization (ROMP)" *Polymer* **2015**, *79*, 205-211. doi: 10.1016/j.polymer.2015.10.028

25. Carter, J. M.; Qian, Y.; Foster, J. C.; **Matson, J. B.*** "Peptide-Based Hydrogen Sulfide-Releasing Gels" *Chem. Commun.* **2015**, *51*, 13131-13134. doi: 10.1039/c5cc04883d

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**Invited submission to *Polymer Chemistry* Emerging Investigators 2015 special issue

23. Meng, X.; **Matson, J. B.**; Edgar, K. J.* "Olefin Cross-metathesis, a Mild, Modular Approach to Functionalized Cellulose Esters" *Polym. Chem*. **2014**, *5*, 7021-7033. doi: 10.1039/c4py01102c

22. Foster, J. C.; **Matson, J. B.*** "Functionalization of Methacrylate Polymers with Thiooximes: A Robust Post-Polymerization Modification Reaction and a Method for the Preparation of H_2S-Releasing Polymers" *Macromolecules* **2014**, *47*, 5089-5095. doi: 10.1021/ma501044b

21. Foster, J. C.; Powell, C. R.; Radzinski, S. C.; **Matson, J. B.*** "*S*-Aroylthiooximes: A Facile Route to Hydrogen Sulfide Releasing Compounds with Structure-Dependent Release Kinetics" *Org. Lett.* **2014**, *16*, 1558-1561. doi: 10.1021/ol500385a

20. Meng, X.; **Matson, J. B.**; Edgar, K.* "Olefin Cross-Metathesis as a Source of Polysaccharide Derivatives: Cellulose ω-Carboxyalkanoates" *Biomacromolecules* **2014**, *15*, 177-187. doi: 10.1021/bm401447v

19. Carreon, A. C.; Santos, W. L.; **Matson, J. B.***; So, R. C.* "Cationic Polythiophenes as Responsive DNA-binding Polymers" *Polym. Chem.* **2014**, *5*, 314-317. doi: 10.1039/c3py01069d

Undergraduate/Graduate/Postdoctoral Publications

18. Sur, S.; Tantakitti, F.; **Matson, J. B.**; Stupp, S. I. "Epitope Topography Controls Bioactivity in Supramolecular Nanofibers" *Biomater. Sci.* **2015**, *3*, 520-532. doi: 10.1039/c4bm00326h

17. **Matson, J. B.**; Navon, Y.; Bitton, R.; Stupp, S. I. "Light-Controlled Hierarchical Self-Assembly of Polyelectrolytes and Supramolecular Polymers" *ACS Macro Lett.* **2015**, *4*, 43-47. doi: 10.1021/mz500677q

16. Ortony, J. H.; Newcomb, C. J.; **Matson, J. B.**; Palmer, L. C.; Doan, P. E.; Hoffman, B. M.; Stupp, S. I. "Internal Dynamics of a Supramolecular Nanofiber" *Nat. Mater.* **2014**, *13*, 812-816. doi:10.1038/nmat3979

15. Newcomb, C. J.; Sur. S.; Ortony, J. H.; Lee, O.S.; **Matson, J. B.**; Boekhoven, J.; Yu, J.; Schatz, G. C.; Stupp, S. I. "Cell Death Versus Survival Instructed by Supramolecular Cohesion of Nanofibers" *Nat. Commun*. **2014**, *5*, 3321. doi: 10.1038/ncomms4321

14. Sur, S.; **Matson, J. B.**†; Newcomb, C. J.; Webber, M. J.; Stupp, S. I. "Photodynamic Control of Bioactivity in a Nanofiber Matrix" *ACS Nano* **2012**, *6*, 10776-10785. doi: 10.1021/nn304101x

13. Webber, M. J.; **Matson, J. B.**†; Tamboli, V. K.; Stupp, S. I. "Controlled Release of Dexamethasone from Peptide Nanofiber Gels to Modulate Inflammatory Response" *Biomaterials* **2012**, *33*, 6823-6832. doi: 10.1016/j.biomaterials.2012.06.003

12. **Matson, J. B.**†; Webber, M. J.; Tamboli, V. K.; Weber, B.; Stupp, S. I. "A Peptide-Based Material for Therapeutic Carbon Monoxide Delivery" *Soft Matter* **2012**, *8*, 6689-6692. doi: 10.1039/c2sm25785h
    **Highlighted in the June 2012 issue of *Chemistry World*

11. **Matson, J. B.**; Newcomb, C. J.; Bitton, R.; Stupp S. I. "Nanostructure-Templated Control of Drug Release from Peptide Amphiphile Nanofiber Gels" *Soft Matter* **2012**, *8*, 3586-3595. doi: 10.1039/c2sm07420f
    **A top-10 most-read Soft Matter article in 2012

10. **Matson, J. B.**; Stupp, S. I. "Self-Assembling Peptide Scaffolds for Regenerative Medicine" *Chem. Commun.* **2012**, *48*, 26-33. doi: 10.1039/c1cc15551b
    **Selected in 2024 as in an online collection highlighting 60 pioneering historic papers from North America for the 60th anniversary of *Chemical Communications*

9. **Matson, J. B.**; Zha, R. H.; Stupp, S. I. "Peptide Self-Assembly for Crafting Functional Biological Materials" *Curr. Opin. Solid St. Mater. Sci.* **2011**, *15*, 225-235. doi: 10.1016/j.cossms.2011.08.001

8. **Matson, J. B.**; Stupp, S. I. "Drug Release from Hydrazone-Containing Peptide Amphiphiles" *Chem. Commun*. **2011**, *47*, 7962-7964. doi: 10.1039/c1cc12570b

7. Lee, S. G.; Brown, J. M.; Rogers, C. J.; **Matson, J. B.**; Krishnamurthy, C.; Rawat, M.; Hsieh-Wilson, L. C. "End-Functionalized Glycopolymers as Mimetics of Chondroitin Sulfate Proteoglycans" *Chem. Sci.* **2010**, *1*, 322-325. doi: 10.1039/c0sc00271b

6. **Matson, J. B.**; Grubbs, R. H. "Monotelechelic Poly(oxa)norbornenes by Ring-Opening Metathesis Polymerization Using Direct End-Capping and Cross-Metathesis" *Macromolecules* **2010**, *43*, 213-221. doi: 10.1021/ma9019366

5. **Matson, J. B.**; Virgil, S. C.; Grubbs, R. H. "Pulsed-Addition Ring-Opening Metathesis Polymerization: Catalyst-Economical Syntheses of Homopolymers and Block Copolymers" *J. Am. Chem. Soc.* **2009**, *131*, 3355-3362. doi: 10.1021/ja809081h

4. **Matson, J. B.**; Grubbs, R. H. "ROMP-ATRP Block Copolymers Prepared from Monotelechelic Poly(oxa)norbornenes using a Difunctional Terminating Agent" *Macromolecules* **2008**, *41*, 5626-5631. doi: 10.1021/ma800980p

3. **Matson, J. B.**; Grubbs, R. H. "Synthesis of Fluorine-18 Functionalized Nanoparticles as in vivo Molecular Imaging Agents" *J. Am. Chem. Soc.* **2008**, *130*, 6731-6733. doi: 10.1021/ja802010d

2. Rawat, M.; Gamma, C. I.; **Matson, J. B.**; Hsieh-Wilson, L. C. "Neuroactive Chondroitin Sulfate Glycomimetics" *J. Am. Chem. Soc.* **2008**, *130*, 2959-2961. doi: 10.1021/ja709993p

1. Joralemon, M. J.; O'Reilly, R. K.; **Matson, J. B.**; Nugent, A. K.; Hawker, C. J.; Wooley, K. L. "Dendrimers Clicked Together Divergently" *Macromolecules* **2005**, *38,* 5436-5443. doi: 10.1021/ma050302r

BOOK CHAPTERS (PEER-REVIEWED)

3. Swilley-Sanchez, S. B.; **Matson, J. B.** "Macromolecular and Supramolecular Approaches for H_2S Delivery" in *Hydrogen Sulfide: Chemical Biology Basics, Detection Methods, Therapeutic Applications, and Case Studies* Wiley, **2023**, 373-425. doi: https://doi.org/10.1002/9781119799900.ch15

2. Kaur, K.; Qian, Y.; **Matson, J. B.** "H_2S Delivery from Aromatic Peptide Amphiphile Hydrogels" *Biomaterials for Tissue Engineering: Methods and Protocols*, Springer, New York, **2018**, 193-208. doi: 10.1007/978-1-4939-7741-3_15

1. **Matson, J. B.**; Grubbs, R. H. "Synthesis of Fluorine-18 Functionalized Nanoparticles as in vivo Molecular Imaging Agents" *NATO Science for Peace and Security Series A: Chemistry and Biology*, *New Smart Materials via Metal Mediated Macromolecular Engineering* Springer Netherlands: **2009**, 237-247.

JOURNAL PUBLICATIONS (NON-PEER-REVIEWED)

3. Boase, N.; Gillies, E.; Goh, R.; Kieltyka, R.; **Matson, J.**; Meng, F.; Sanyal, A.; Sedláček, O. "Stimuli-responsive polymers at the interface with biology" *Biomacromolecules*, **2025**, *submitted*.
**Introduction to special issue organized for *Biomacromolecules*

2. Kieltyka, R. E.; **Matson, J. B.**; Besenius, P.* "Structure to Function in Supramolecular Polymers and Materials" *Macromol. Rapid Commun.* **2018**, *39*, e1800597. doi: 10.1002/marc.201800574
**Introduction to a special issue organized for *Macromol. Rapid Commun.* based on an ACS symposium

1. **Matson, J. B.***; Baker, M. B. "Polymers for biology, medicine and sustainability" *Polym. Int*. **2019**, *68*, 1219-1219.
**Introduction to a special issue organized for *Polym. Int*. based on an ACS symposium

PATENTS

Published

2. Matson, J. B.; Arrington, K. J.; Chen, J.; Edgar, K. J. "Copolymer Compatibilizers and Uses Thereof" PCT/US2019/022760

1. Edgar, K. J.; Meng, X.; Matson, J. B. "Cross-Metathesized Polysaccharide Derivatives and Processes for Preparing Them" US2016/0215068 A1

MENTORING

Postdoctoral scholars previously in the Matson group

3. Dr. Rajnish Kumar. 2021-2023. Current position: University of North Carolina, Chapel Hill
2. Dr. Santu Sarkar. 2021-2023. Current position: Wake Forest University
1. Dr. Yin Wang. 2017-2020. Current position: Associate Professor of Pharmacy, Shanghai Jiao Tong University

PhD students graduated from Matson group

18. Dr. Clark Vu, Defended PhD on February 16, **2026**.Current affiliation: Sandia National Lab
17. Dr. Sarah Swilley, Defended PhD on Sep 25, **2024** (VT) and Mar 12 **2025** (U. Maastricht, the Netherlands) Current affiliation: Covestro
16. Dr. Abigail (Bratton) Chinn, Defended PhD on May 1, 2024. Current affiliation:
15. Dr. Zhao Li, Defended PhD on August 10, 2023. Current affiliation: InnoPep
14. Dr. Samantha Scannelli, Defended PhD on May 9, **2023**. Current affiliation: VB Cosmetics
13. Dr. Yumeng (Jackie) Zhu. Defended PhD on April 27, **2023**. Current affiliation: Arrowhead Pharma
12. Dr. Sarah Blosch. Defended PhD on July 7, **2022**. Current affiliation: AGC Chemicals Americas, Inc.
11. Dr. Mohammed Alaboalirat. Defended PhD on July 6, **2022**. Current affiliation: Saudi Aramco
10. Dr. Anastasia Arrington. Defended PhD on June 9, **2022**. Current affiliation: Intel Corp.
9. Dr. Kearsley Dillon. Defended PhD on July 7, **2021**. Current affiliation: Afton Chemical

8. Dr. Ryan Carrazzone. Defended PhD on Jun 9, **2021**. Current affiliation: Intel Corp.
7. Dr. Kuljeet Kaur. Defended PhD on Dec 3, **2019**. Current affiliation: Assistant Professor IIT Gandhinagar
6. Dr. Yun Qian. Defended PhD on May 13, **2019**. Current affiliation: Circ
5. Dr. Mingjun Zhou. Defended PhD on Apr 30, **2019**. Current affiliation: Yantai University in China
4. Dr. Chad Powell. Defended PhD on Apr 25, **2019**. Current affiliation: Syensqo
3. Dr. Kyle Arrington. Defended PhD on Apr 30, **2018**. Current affiliation: Intel Corp.
2. Dr. Scott Radzinski. Defended PhD on Mar 23, **2017**. Current affiliation: Carlisle Weatherproofing Technologies
1. Dr. Jeffrey C. Foster. Defended PhD on Mar 22, **2017**. Current affiliation: Oak Ridge National Lab

TEACHING EXPERIENCE

Virginia Tech

Organic Chemistry I for Majors (CHEM 2565)	Spring 2026
Organic Chemistry II for Non-Majors (CHEM 2536)	Spring 2014-2016, 2018, Fall 2021
Organic Chemistry II for Majors (CHEM 2566)	Spring 2023
Organic Chemistry of Polymers (CHEM 4534)	Fall 2019, 2020
Synthesis and Reactions of Macromolecules (CHEM 5704 or 5705)	Fall 2012-2018
Advanced Macromolecular Chemistry (CHEM 6564 or 5706)	Spring 2019, 2021-22, 2024

American Chemical Society

Polymer Chemistry: Principles and Practice Short Course Instructor 2017-present

SELECTED INTERNAL UNIVERSITY SERVICE

Virginia Tech Department of Chemistry

4. Honorifics Committee Chair (2022-present)
3. Personnel Committee Member (2019, 2023-2025)
2. Associate Department Chair (2022-present)
1. Director of Graduate Admissions (2018-2022)

Virginia Tech Macromolecules Innovation Institute

1. Co-Chair of MII seminar committee (2014-2024)

Virginia Tech College of Science

1. New Faculty Leadership and Skills Programs Planning Committee Member (2018-present)

PROFESSIONAL SERVICE

International Union of Pure and Applied Chemistry (IUPAC)

5. Associate Member of Division IV (Polymer Division) (2024-25)
4. Titular Member of Division IV (Polymer Division) (2020-2023)
3. Secretary of Subcommittee on Polymer Terminology (SPT) in Division IV (Polymer Division) (2020-present)
2. Member of Subcommittee on Polymer Terminology (SPT) in Division IV (Polymer Division) (2017-present)
1. Young Observer for 2017 General Assembly (São Paolo, Brazil)

American Chemical Society

1. Associate Member of Committee on Nomenclature, Terminology and Symbols (2024-present)
2. Treasurer of Polymer (POLY) Division (2024-present)

Editorial Advisory Boards

5. *Journal of Functional Biomaterials* (2021-2024)
4. *Polymer Chemistry* (2019-present)
3. *Journal of Polymer Science* (2019-present)
2. *Polymer International* (2017-present)
1. Cambridge Scholars (2017-present)

Reviewer for funding agencies

ACS Petroleum Research Fund, Army Research Office, Binational Science Foundation, British Heart Foundation, European Research Council, Icelandic Research Fund, Israeli Science Foundation, National Institutes of Health (NCI ZCA1 TCRB-V), National Science Foundation (Biomaterials Program, MSN Program, Polymers program), Oak Ridge National Lab, Research Corporation, among others

Reviewer for journals

Acta Biomater., *Angewandte Chemie*, *ACS Appl. Mater. Interfaces*, *ACS Biomater. Sci.*, *ACS Chem. Biol.*, *ACS Macro Lett.*, *Adv. Healthcare Mater.*, *Anal. Chem.*, *Antiox. & Redox Signaling*, *Bioconj. Chem.*, *Biomacromolecules*, *Biomaterials*, *Bioorg. Med. Chem. Lett.*, *Carb. Polym.*, *Chem. Commun.*, *Chem. Sci.*, *Curr. Med. Chem.*, *Front. Mater.*, *Isr. J. Chem.*, *J. Am. Chem. Soc.*, *J. Mater. Chem. B*, *J. Org. Chem.*, *J. Poly Sci. Part B: Poly. Phys.*, *Langmuir*, *Macromolecules*, *Macromol. Theor. Sim., Macromol. Rapid Comm., Mol. Pharm.*, *Nature Comm., Org. Lett.*, *Polymer*, *Polym. Chem.*, *Sci. Adv.*, *Science*, *Synlett*, among others.

Symposium organization

13. Co-organizer for ACS Fall 2026 Meeting for symposium titled "Supramolecular Biomaterials: From Structure to Function" Chicago, IL, Aug 23-27, **2026**.
12. Co-organizer for *Pacifichem 2025* for symposium titled "Chemistry and Chemical Biology of Gasotransmitters (Nitric Oxide, Carbon Monoxide, and Hydrogen Sulfide)" Honolulu, HI, Dec 15-20, **2025**.
11. Co-organizer for *7th World Congress on Hydrogen Sulfide in Biology and Medicine* Baltimore, MD, June 4-6, **2024**.
10. Co-organizer for Spring 2024 *National Meeting of the American Chemical Society* for symposium titled "Structure to Function in Supramolecular Polymers" New Orleans, LA, March 17-21, **2024**.
9. Co-organizer for *Pacifichem 2021* for symposium titled "Nitric Oxide, Carbon Monoxide, and Hydrogen Sulfide as Potential Therapeutic Agents: The 4th American Gasotransmitter Symposium" Honolulu, HI, Dec 16-21, **2021**.
8. Co-organizer for *Pacifichem 2021* for symposium titled "Synthesis and Applications of Molecular Bottlebrush Polymers" Honolulu, HI, Dec 16-21, **2021**.
7. Co-organizer for *261st National Meeting of the American Chemical Society* for symposium titled "Structure to Function in Supramolecular Polymers" Atlanta, GA, August 22-26, **2021**.
6. Co-organizer for *2nd American Gasotransmitter Symposium* Eugene, OR, May 18-19, **2019**.
5. Co-organizer for *257th National Meeting of the American Chemical Society* for symposium titled "Synthesis and Properties of Densely Grafted Polymers" Orlando, FL, March 31-April 4, **2019**.
4. Co-organizer for *255th National Meeting of the American Chemical Society* for symposium titled "International Symposium on Biorelated Polymers: Innovation in Biomedical Polymers" New Orleans, LA, March 18-22, **2018**.
3. Co-organizer for *1st American Gasotransmitter Symposium* Atlanta, GA, April 22-23, **2017**.
2. Co-organizer for *253rd National Meeting of the American Chemical Society* for symposium titled "Structure to Function in Supramolecular Polymers and Materials" San Francisco, CA, April 2-6, **2017**.
1. Co-organizer for *251st National Meeting of the American Chemical Society* for symposium titled "Supramolecular Polymers: From Structure to Advanced Functionality" San Diego, CA, March 13-17, **2016**.

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

5. Wake Forest Baptist Comprehensive Cancer Center (2020-present)
4. Virginia Tech Center for Engineered Health (2016-present)
3. Virginia Tech Center for Drug Discovery (2015-present)
2. Virginia Tech Macromolecules Innovation Institute (2012-present)
1. American Chemical Society (2009-present)

ORAL CONFERENCE PRESENTATIONS (presenting author underlined)

115. Addo, I. D.; Steele, A. Q.; Matson, J. B. "Taming Poly(Olefin Sulfones)" Syensqo Summit, Alpharetta, GA, Mar 26, **2026**.

114. Tousian, B.; Eliraz, N.; Zhu, Y.; Shmidov, Y.; Bitton, R.; Matson, J. B. "Modifying alginate with switch peptides to enable cell-triggered changes in hydrogel chemistry" *American Chemical Society Spring 2026 National Meeting*, Atlanta, GA, Mar 22-26, **2026**.

113. Li, Z.; Swilley, S.; Tousian, B.; Bitton, R.; Baker, M.; Matson, J. B. "Peptide and polymer-based materials for the delivery of the hydrogen sulfide" *Pacifichem* 2025, Honolulu, HI, Dec 15-20, **2025**.

112. Steele, A. S.; Addo, I.; Matson, J. B. "Poly(olefin sulfones): Controlling polymerization and depolymerization" *Pacifichem* 2025, Honolulu, HI, Dec 15-20, **2025**.

111. Steele, A. S.; Matson, J. B. "Allylsulfone-mediated RAFT (AS-RAFT): Controlled Synthesis of Poly(olefin sulfones)" *Controlled Radical Polymerization 2025 Workshop*, Stellenbosch, South Africa, Nov 9-12, **2025**.

110. Sarkar, I.; Matson, J. B. "Polymer-based mitochondrial delivery of hydrogen sulfide donors" *American Chemical Society Fall 2025 National Meeting*, Washington, DC, Aug 17-21, **2025**.

109. Samaniego Gonzalez, D.; Ward, A.; Scannelli, S.; Matson, J. B. "Linear Free Energy Relationships in Ring-Opening Metathesis Polymerization" *American Chemical Society Fall 2025 National Meeting*, Washington DC, Aug 17-21, **2025**.

108. Matson, J. B. "Synthesis and Depolymerization of Poly(olefin sulfones)" *American Chemical Society Fall 2025 National Meeting*, Washington DC, Aug 17-21, **2025**.

107. Matson, J. B. "Controlling the Synthesis of Poly(olefin sulfones)" *Advanced Polymers through Macromolecular Engineering (APME) 2025 Conference*, Catania, Sicily, Italy, May 5-8, **2025**.

106. Swilley, S.; Wu, H.; Tomasina, C.; Moroni, L.; Wieringa, P.; Baker, M. B.; Matson, J. B. "Materials Approaches to Controlled Delivery of Reactive Sulfur Species" *Virginia Tech 2025 Macromolecules Innovation Institute Technical Conference and Review* Blacksburg, VA, Apr. 7-9, **2025**.

105. Matson, J. B. "Linear free energy relationships in polymerizations: The case of the anchor group in ring-opening metathesis polymerization" *American Chemical Society Spring 2025 National Meeting*, San Diego, CA, Mar 23-27, **2025**.

104. Matson, J. B. "New biomedical materials from polysaccharides through side-chain and end group functionalization reactions" *American Chemical Society Spring 2025 National Meeting*, San Diego, CA, Mar 23-27, **2025**.

103. Matson, J. B. "Switch peptides enable cell-triggered increases in functionality in synthetic extracellular matrices" *American Chemical Society Spring 2025 National Meeting*, San Diego, CA, Mar 23-27, **2025**.

102. Zhu, Y.; Shmidov, Y.; Tetteh, M; Eliraz, N.; Bitton, R.; Matson, J. B. "Cell-Responsive Materials Using Switch Peptides" Peptide Materials Gordon Research Conference, Pomona, VA, Jan. 19-23, **2025**.

101. Matson, J.B. "Synthesis, Self-Assembly, and Scattering of Amphiphilic Tapered Bottlebrush Block Copolymers" 2024 *Southeast Regional Polymer Forum*, Oak Ridge, TN, Oct 7-9 **2024**.

100. Matson, J. B. "Beyond (Macro)molecules: Non-covalent interactions in covalent and supramolecular polymers" *American Chemical Society Fall 2024 National Meeting*, Denver, CO, Aug 18-22, **2024**.

99. Arrington, K.; Chinn, A. F.; Coutinho Trindade, I.; Moore, R. B.; Matson, J. B. "Polysaccharide-based block copolymers as materials and compatibilizers in polymer blends" *American Chemical Society Fall 2024 National Meeting*, Denver, CO, Aug 18-22, **2024**.

98. Matson, J. B. "From postdoc to professor: People, places, and polymers" *American Chemical Society Fall 2024 National Meeting*, Denver, CO, Aug 18-22, **2024**.

97. Matson, J. B. "Synthesis of complex polymer topologies using reversible-deactivation radical polymerization and ring-opening metathesis polymerization" *IUPAC MACRO2024*, Coventry, England, Jul 1-4, **2024**.

96. Matson, J. B. "Self-Assembly of Bottlebrush Polymer Amphiphiles" *Tosoh Polymer Congress*, Raleigh, NC, Jun 11-12, **2024**.

95. Matson, J. B. "Materials Approaches to Controlled Delivery of Reactive Sulfur Species" *7th World Congress on H_2S in Biology and Medicine* Baltimore, MD, Jun 4-6, **2024**.

94. Kethireddy, S.; Chinn, A. F.; Matson, J. B. "Synthesis of block copolymers of ethyl cellulose and poly(benzyl glutamate) for compatibilizing blends of ethyl cellulose and poly(ethylene terephthalate)" *American Chemical Society Spring 2024 National Meeting*, New Orleans, LA, Mar 17-21, **2024**.

93. Zu, Y.; Shmidov, Y.; Tetteh, M.; Eliraz, N.; Bitton, R.; Matson, J. B. "Turning-on physical crosslinks in synthetic extracellular matrices using switch peptides" *American Chemical Society Spring 2024 National Meeting*, New Orleans, LA, Mar 17-21, **2024**.

92. Matson, J. B. "Chemically recyclable thermoplastic elastomers using redox switchable polymerization catalysis" *American Chemical Society Spring 2024 National Meeting*, New Orleans, LA, Mar 17-21, **2024**.

91. Matson, J. B. "Cellular Uptake and Antioxidant Activity of H_2S-Releasing Tetrapeptide Supramolecular Polymer Nanostructures" *Virginia Tech Center for Drug Discovery Winter Meeting*, Blacksburg, VA, Jan. 9, **2024**.

90. Matson, J. B. "Triggering Cytotoxicity using a Dual Enzyme-Responsive Peptide-Iron Complex" *Signaling and Biotechnology Annual Retreat*, Winston-Salem, NC, Nov 9, **2023**.

89. Yumeng Zhu, Yulia Shmidov, Ronit Bitton, Matson, J. B.; "Mimicking Native Cryptic Sites in Synthetic ECM Materials" *IUPAC-CHAINS 2023*, The Hague, the Netherlands, Aug 20-25, **2023**.

88. Chinn, A. F.; Matson, J. B. "Polysaccharide H_2S donors: Amylopectin N-(thiocarboxyanhydride) polymers via thiol-ene 'click' photochemistry" *American Chemical Society Spring 2023 National Meeting*, Indianapolis, IN, Mar 26-30, **2023**.

87. Chinn, A. F.; Deshmukh, S.; Farzeen, P.; Li.; Matson, J. B. "Polysaccharide-*block*-polypeptide biodegradable block copolymers via polymerization-induced self-assembly in water" *American Chemical Society Spring 2023 National Meeting*, Indianapolis, IN, Mar 26-30, **2023**.

86. Archer, W. R.; Matson, J. B.; Schulz, M. D.; Zhu, Y. "Enhancing enzyme-triggered H_2S-induced cytotoxicity in glioma via a supramolecular peptide-iron material" *American Chemical Society Spring 2023 National Meeting*, Indianapolis, IN, Mar 26-30, **2023**.

85. Bitton, R.; Matson, J. B.; Shmidov, Y.; Zhu, Y. "Enzyme-responsive polymeric hydrogels as ECM mimics" *American Chemical Society Spring 2023 National Meeting*, Indianapolis, IN, Mar 26-30, **2023**.

84. Zhu, Y.; Li, Z.; Matson, J. B. "Supramolecular polymers as artificial enzymes: Nanostructures regulate enzymatic efficiency and selectivity" *American Chemical Society Spring 2023 National Meeting*, Indianapolis, IN, Mar 26-30, **2023**.

83. Matson, J. B. "Livingness in ring-opening metathesis polymerization: The effect of the anchor group" *American Chemical Society Spring 2023 National Meeting*, Indianapolis, IN, Mar 26-30, **2023**.

82. Matson, J. B. Zhu, Y.; Shmidov, Y.; Bitton, R. "Mimicking native cryptic sites in synthetic biomaterials: Polymer hydrogels with pendant switch peptides" *264th American Chemical Society National Meeting*, Chicago, IL, Aug 21-25, **2022**.

81. Matson, J. B. "Tapered bottlebrush polymers: Synthesis, SANS, and self-assembly" *264th American Chemical Society National Meeting*, Chicago, IL, Aug 21-25, **2022**.

80. Matson J. B. "Block Copolymers of Polysaccharides and Polyolefins As Compatibilizers in Blends of Bio-Derived Polymers" *MACRO2022*, Winnipeg, Canada, July 17-21, **2022**.

79. Matson J. B. "Reconsidering Terms for Mechanisms of Polymer Growth: The "Step-Growth" and "Chain-Growth" Dilemma" *MACRO2022*, Winnipeg, Canada, July 17-21, **2022**.

78. Matson J. B. "Enhancing Polymer Hydrogel Functionality Using Switch Peptides As Cryptic Site Mimics" MACRO2022, Winnipeg, Canada, July 17-21, **2022**.

77. Matson J. B. "Tapered Bottlebrush Polymers: Synthesis, Characterization, and Self-Assembly" *MACRO2022*, Winnipeg, Canada, July 17-21, **2022**.

76. Matson, J. B. "Practical considerations in ring-opening metathesis polymerization: Anchor group, solvent, and additives" *Bordeaux Polymer Conference 2022*, Bordeaux, France, Jun 13-16, **2022**.

75. Matson, J. B. "Optimizing ROMP grafting-through in bottlebrush polymer synthesis" *263rd American Chemical Society National Meeting*, San Diego, CA, Mar 20-24, **2022**.

74. Matson, J. B. "Self-Amplified Depolymerization of Polythiourethanes" *263rd American Chemical Society National Meeting*, San Diego, CA, Mar 20-24, **2022**.

73. Matson, J. B. "Tapered bottlebrush polymers: Synthesis, characterization, and self-assembly" *Virginia Tech 2022 Macromolecules Innovation Institute Technical Conference and Review* Blacksburg, VA, Mar. 1–3, **2022**.

72. Matson, J. B. "Supramolecular aromatic peptide amphiphile tetramers: Self-assembly, bioactivity, and catalysis" *Pacifichem 2021*, Virtual, Dec. 16-21, **2021**.

71. Matson, J. B. "Applications of RDRP for the Construction of Complex Polymer Topologies" *Pacifichem 2021*, Virtual, Dec. 16-21, **2021**.

70. Matson, J. B. "Tapered bottlebrush polymers: Synthesis, characterization, and self-assembly" *Pacifichem 2021*, Virtual, Dec. 16-21, **2021**.

69. Matson, J. B. "Triggered and Controlled Delivery of Reactive Sulfur Species: From Small Molecules to Materials" *Pacifichem 2021*, Virtual, Dec. 16-21, **2021**.

68. Matson, J. B. "Covalent and Supramolecular Materials for Delivery of Bioactive Gases" *Pacifichem 2021*, Virtual, Dec. 16-21, **2021**.

67. Matson, J. B. "Synthesis of Complex Polymer Topologies using Reversible-Deactivation Radical Polymerization Methods" ACS POLY Division Controlled Radical Polymerization Workshop, Charleston, SC, Nov. 14-17, **2021**.

66. Li, Z.; Matson, J. B. "Supramolecular hybrid materials: Templation of helical Ag nanoparticle arrays using supramolecular polymers based on peptides" *262nd American Chemical Society National Meeting*, Atlanta, GA, Aug 22-26, **2021**.

65. Matson, J. B. "Helical supramolecular polymers: Self-assembly, bioactivity, and catalysis" *262nd American Chemical Society National Meeting*, Atlanta, GA, Aug 22-26, **2021**.

64. Carrazzone, R. J.; Matson, J. B. "Harnessing core chain mobility in tuning small molecule release rates from polymer micelles" *261st American Chemical Society National Meeting*, virtual, Apr 5-16, **2021**.

63. Matson, J. B. "Supramolecular nanohelices for drug delivery, ion-transport, and sensing" *260th American Chemical Society National Meeting*, Virtual, Aug 17-20, **2020**.

62. Matson, J. B. "Macromolecular and Supramolecular Materials for Signaling Gas Delivery" *Virginia Tech 2019 Macromolecules Innovation Institute Technical Conference and Review* Blacksburg, VA, Nov. 4-6, **2019**.

61. Matson, J. B. "Delivering Reactive Sulfur Species: From Small Molecules to Materials" *VI International Workshop on Nitric Oxide in Cancer and Beyond*, New York, NY, Sep 20-22, **2019**.

60. Matson, J. B. "Self-assembling peptide-based materials for therapeutic H_2S delivery" *47th IUPAC World Chemistry Congress*, Paris, France, Jul 5-12, **2019**.

59. Matson, J. B. "New materials by blending commodity polymers with polysaccharides" *47th IUPAC World Chemistry Congress*, Paris, France, Jul 5-12, **2019**.

58. Matson, J. B. "Macromolecular and Supramolecular Materials for Signaling Gas Delivery" *Polymers Gordon Research Conference*, South Hadley, MA Jun 9-14, **2019**.

57. Matson, J. B. "Chemical Tools for Delivery of Reactive Sulfur Species: Small Molecules to Materials" *2nd American Gasotransmitter Symposium*, Eugene, OR May 18-19, **2019**.

56. Matson, J. B. "Self-assembled tetrapeptide nanocoils for delivery of hydrogen sulfide" *257th American Chemical Society National Meeting*, Orlando, FL Mar 31-Apr 4, **2019**.

55. Matson, J. B. "Block copolymers of polysaccharides and conventional polymers as compatibilizers in blends of bio-derived polymers" *257th American Chemical Society National Meeting*, Orlando, FL Mar 31-Apr 4, **2019**.

54. Matson, J. B. "Aqueous self-assembly of amphiphilic cylindrical and cone-shaped (tapered) bottlebrush polymers prepared by sequential-addition of macromonomers ring-opening metathesis polymerization (SAM-ROMP)" *257th American Chemical Society National Meeting*, Orlando, FL Mar 31-Apr 4, **2019**.

53. Matson, J. B. "Tapered bottlebrush polymers: Cone-shaped polymers prepared by sequential addition of macromonomers ring-opening metathesis polymerization (SAM-ROMP)" *Macro 2018 World Polymer Congress*, Cairns, Australia, Jul 1-5, **2018**.

52. Matson, J. B. "Tuning release of signaling gases by controlling mobility in a micelle core" *Macro 2018 World Polymer Congress*, Cairns, Australia, Jul 1-5, **2018**.

51. Matson, J. B. "Well-Defined Polysaccharide Block, Segmented, and Graft Copolymers as Compatibilizers in Blends of Bio-Derived Polymers" *Macro 2018 World Polymer Congress*, Cairns, Australia, Jul 1-5, **2018**.

50. Matson, J. B. "Non-centrosymmetric nanostructures: Tapered (cone-shaped) bottlebrush polymers by sequential-addition of macromonomers ring-opening metathesis polymerization (SAM-ROMP)" *4th Fusion Functional Polymeric Materials Conference*, Nassau, Bahamas, Jun 5-8, **2018**.

49. Matson, J. B. "Chemical Tools for Delivery of H_2S and Related Species: Small Molecules, Polymers, and Hydrogels" *5th World Congress on H_2S Biology and Medicine*, Toronto, Canada, May 31-June 3, **2018**.

48. Matson, J. B.; Foster, J. C.; Radzinski, S. C. "Tapered (Cone-Shaped) Polymers by Sequential-Addition of Macromonomers Ring-Opening Metathesis Polymerization (SAM-ROMP)" *255th ACS National Meeting*, New Orleans, LA, Mar 18-22, **2018**.

47. Powell, C. R.; Foster, J. C.; Okyere, B.; Theus, M.; Matson, J. B. "Polymeric Systems for the Release of COS and H_2S" *255th ACS National Meeting*, New Orleans, LA, Mar 18-22, **2018**.

46. Matson, J. B.; Arrington, K. J. "Making and Breaking Polymers with Light: Blue-Light-Mediated Photoiniferter Polymerization and Polyketone Degradation" *255th ACS National Meeting*, New Orleans, LA, Mar 18-22, **2018**.

45. Arrington, K. J.; Chen, J.; Mondschein, R. J.; Long, T. E.; Edgar, K. J.; Matson, J. B.; "Synthesis of Polysaccharide ABA Triblock Copolymers by One-Pot Cross-Metathesis Ring-Opening Metathesis Polymerization" *255th ACS National Meeting*, New Orleans, LA, Mar 18-22, **2018**.

44. Matson, J. B.; Foster, J. C. "Tuning Release of Signaling Molecules by Controlling Mobility in a Micelle Core" *255th ACS National Meeting*, New Orleans, LA, Mar 18-22, **2018**.

43. Zhou, M.; Matson, J. B. "Thermoresponsive Dendritic Elastin-Like Peptides" *254th ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.

42. Arrington, K. J.; Matson, J. B. "Compatibilizing Methylcellulose and Polyethylene for Sustainable Materials" *254th ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.

41. Kaur, K.; Qian, Y.; Foster, J. C.; Matson, J. "Thiooxime Containing H_2S Releasing Peptide Hydrogels: An Insight into Stability and Self-Assembly" *254th ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.

40. Qian, Y.; Kaur, K.; Foster, J.; Matson, J. "Self-assembled Aromatic Peptide Hydrogels with Controlled H_2S Release" *254th ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.

39. Powell, C. R.; Foster, J. C.; Okyere, B.; Theus, M.; Matson, J. "Synthesis and Properties of COS Releasing Polymeric Systems" *254th ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.

38. Matson, J. B.; Radzinski, S. C. "Synthesis of Tapered Bottlebrush Polymers using Sequential Ring-Opening Metathesis Polymerization" *254th ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.

37. Matson, J. B. "The Transfer-To Method in Bottlebrush Polymer Synthesis" *46th IUPAC World Chemistry Congress*, São Paulo, Brazil, Jul 9-14, **2017**.

36. Matson, J. B. "Materials for H_2S Delivery: Polymer micelles and peptide-based gels" *1st American Gasotransmitter Symposium*, Atlanta, GA, Apr 21-22, **2017**.

35. Arrington, K. J.; Waugh, J.; Radzinski, S.; Matson, J. B. "Design and study of biodegradable and photodegradable thermoplastic elastomers" *253rd ACS National Meeting*, San Francisco, CA, Apr 2-6, **2017**.

34. Radzinski, S. C.; Foster, J. C.; Chapleski, R.; Troya, D.; Matson, J. B**.** "Synthesis and characterization of bottlebrush polymers: The importance of the anchor group" *253rd ACS National Meeting*, San Francisco, CA, Apr 2-6, **2017**.

33. Radzinski, S. C.; Foster, J. C.; Matson, J. B. "Synthesis of bottlebrush polymers using the transfer-to approach" *253rd ACS National Meeting*, San Francisco, CA, Apr 2-6, **2017**.

32. Matson, J. B.; Qian Y.; Kaur, K. "Supramolecular gels for delivery of hydrogen sulfide" *253rd ACS National Meeting*, San Francisco, CA, Apr 2-6, **2017**.

31. Matson, J. B. Foster, J. C. "Polymeric materials for delivery of hydrogen sulfide (H_2S), a biologically relevant signaling gas" *253rd ACS National Meeting*, San Francisco, CA, Apr 2-6, **2017**.

30. Matson, J. B.; Arrington, K. J. "Photo- and biodegradable thermoplastic elastomers containing cellulose and polylactide" *253rd ACS National Meeting*, San Francisco, CA, Apr 2-6, **2017**.

29. Arrington, K. J.; Matson, J. B. "Synthesis of a Bio- and Photodegradable Thermoplastic Elastomer" *Southeastern Regional Meeting of the ACS*, Columbia, SC, Oct 23-27, **2016**.

28. Radzinski, S. C.; Matson, J. B. "Synthesis and Characterization of Bottlebrush Polymers: The Importance of the Anchor Group" *Southeastern Regional Meeting of the ACS*, Columbia, SC, Oct 23-27, **2016**

27. Powell, C. R.; Matson, J. B. "Therapeutic Delivery of H_2S via COS: Small Molecule and Polymeric Donors with Benign Byproducts" *Southeastern Regional Meeting of the ACS*, Columbia, SC, Oct 23-27, **2016**.

26. Matson, J. B.; Arrington, K. J. "Synthesis of Aliphatic Polyketones using Ring-opening Metathesis Polymerization and Their Use in Photodegradable Thermoplastic Elastomers" *2016 Macromolecules Innovation Institute Technical Conference and Review*, Blacksburg, VA, Oct 10-12, **2016**.

25. Matson, J. B.; Gandour, R. D. "Flipping Organic Chemistry: A Broadly Applicable Method for Flipping a Large Science Class" *Conference on Teaching Large Classes*, Blacksburg, VA, Jul 21, **2016**.

24. Foster, J. C.; Matson, J. B. "Morphological Control of the Release Profile of H_2S-Releasing Micelles" 251st *ACS National Meeting*, San Diego, CA, Mar 13-17, **2016**.

23. Matson J. B. "Thiol-Triggered Hydrogen Sulfide-Releasing Gels" *251st ACS National Meeting*, San Diego, CA, Mar 13-17, **2016**.

22. Matson, J. B. "The Transfer-To Approach to Bottlebrush Polymer Synthesis" *2nd Fusion Functional Polymeric Materials Conference*, Ascot, England, Aug 5-8, **2015**.

21. Matson, J. B.; "Materials for Therapeutic Delivery of Hydrogen Sulfide" *Nanoparticles at the Interface between Biology and the Materials World*, Rehovot, Israel, Jul 5-6, **2015**.

20. Matson, J. B.; Carter, J. M. "Self-Assembling Peptide Materials for Hydrogen Sulfide Delivery" *249th ACS National Meeting*, Denver, CO, Mar 22-26, **2015**.

19. Matson, J. B.; Foster, J. C. "Triggered Delivery of Therapeutic Hydrogen Sulfide from Macromolecular and Supramolecular Carriers" *249th ACS National Meeting*, Denver, CO, Mar 22-26, **2015**.

18. Meng, X.; Matson, J. B.; Edgar, K. J. "Olefin Cross-metathesis, a Mild, Modular Approach to Functionalized Cellulose Esters" *249th ACS National Meeting*, Denver, CO, Mar 22-26, **2015**.

17. Matson, J. B. "Materials for Therapeutic Delivery of H_2S" *4th Zing Polymer Chemistry Conference*, Cancun, Mexico, Dec 10-13, **2014**.

16. Foster, J. C.; Matson, J. B. "Polymer Functionalization with Thiooximes: A Facile Route to H_2S-Releasing Polymers" *248th ACS National Meeting*, San Francisco, CA, Aug 10-14, **2014**.

15. Edgar, K. J.; Meng, X.; Matson, J. B.; Liu, H. Y. "Versatile Design and Synthesis of Cellulose Derivatives for Amorphous Solid Dispersions" *247th ACS National Meeting*, Dallas, TX, Mar 16-20, **2014**.

14. Meng, X; Matson, J. B.; Edgar, K. J. "Olefin Cross-Metathesis as a Source of Novel Polysaccharide Derivatives" *247th ACS National Meeting*, Dallas, TX, Mar 16-20, **2014**.

13. Matson, J. B.; Foster, J. C. "Materials for Therapeutic Signaling Gas Delivery" *Functional Polymeric Materials*, Cancun, Mexico, Feb 10-13, **2014**.

12. Matson, J. B; Radzinski, S. C. **"**Self-Assembled and Covalent Nanoobjects for Drug Delivery and Regenerative Medicine" *Macromolecules and Interfaces Institute Technical Conference and Review*, Blacksburg, VA, Oct 28-30, **2013**.

11. Ortony, J. H.; Matson, J. B.; Palmer, L. C.; Newcomb, C. J.; Doan, P. E.; Hoffman, B. M.; Stupp, S. I. "Direct measurement of internal dynamics in a self-assembled nanofiber" *245th ACS National Meeting*, New Orleans, LA, Apr 7-11, **2013**.

10. Matson, J. B.; Webber, M. J.; Weber, B.; Tamboli, V. K.; Stupp, S. I. "Signaling Gas Delivery from Supramolecular Polymers" *IUPAC MACRO2012 World Polymer Congress*, Blacksburg, VA, Jun 24-29, **2012**.

9. Matson, J. B.; Webber, M. J.; Tamboli, V.; Stupp, S. I. "Release of Soluble Signaling Molecules from Peptide-Amphiphile Supramolecular Polymers" *22nd American Peptide Symposium*, San Diego, CA, Jun 25-30, **2011**.

8. Matson, J. B.; Stupp, S. I. "Tunable Small-Molecule Drug Release from Peptide-Amphiphile Supramolecular Polymers" *241st ACS National Meeting*, Anaheim, CA, Mar 27-31, **2011**.

7. Virgil, S.C.; Kuhn, K. M.; Matson, J. B.; Golisz, S. R.; Hazari, N.; Grubbs, R. H.; Bercaw, J. E.; Stoltz, B. M. "Automation and robotics in an academic organometallic chemistry research" *240th ACS National Meeting*, Boston, MA, Aug 22-26, **2010**.

6. Matson, J. B.; Virgil, S. C.; Grubbs, R. H. "Polynorbornenes prepared by Pulsed-Addition Ring Opening Metathesis Polymerization" *237th ACS National Meeting*, Salt Lake City, UT, Mar 22-26, **2009**. (Excellence in Graduate Polymer Research Award talk)

5. Matson, J. B.; Virgil, S. C.; Grubbs, R. H. "ROMP-ATRP Block Copolymers and Pulsed-Addition ROMP" *NATO Advanced Study Institute for New Smart Materials via Metal Mediated Macromolecular Engineering: From Complex to Nano Structures*, Antalya, Turkey, Sep 1-12, **2008**.

4. Matson, J. B.; Grubbs, R. H. "Synthesis of Fluorine-18 Functionalized Nanoparticles as in vivo Molecular Imaging Agents" *NATO Advanced Study Institute for New Smart Materials via Metal Mediated Macromolecular Engineering: From Complex to Nano Structures*, Antalya, Turkey, Sep 1-12, **2008**.

3. Matson, J. B.; Grubbs, R. H. "Synthesis of Fluorine-18 Functionalized Nanoparticles as in vivo Molecular Imaging Agents" *International Symposium on Olefin Metathesis XVII*, Pasadena, CA, Jul 29-Aug 3 **2007**.

2. Joralemon, M. J.; Nugent, A. K.; Matson, J. B.; O'Reilly, R. K.; Hawker, C. J.; Wooley, K. L. "Clicking Together Dendritic Macromolecules Divergently" *228th ACS National Meeting*, Philadelphia, PA, Aug 22-26, **2004**.

1. O'Reilly, R. K.; Joralemon, M. J.; Nugent, A. K.; Matson, J. B.; Hawker, C. J.; Wooley, K. L. "A Novel Approach to Regioselectively-functionalized Amphiphilic Block Copolymers and Nanoparticles*" 228th ACS National Meeting*, Philadelphia, PA, Aug 22-26, **2004**.

INVITED SEMINARS at DEPARTMENTS, COMPANIES, and ORGANIZATIONS

68. IIT Bombay (*India*), Department of Chemical Engineering, Jan. 12, **2026**.
67. National Chemical Laboratory (*India*), Jan. 9, **2026**.
66. Mahindra University (*India*), Centre for Life Sciences, Jan. 7, **2026**.
65. IIT Madras (*India*), Department of Chemical Engineering, Jan. 5, **2026**.
64. Stellenbosch University (*South Africa*), Department of Chemistry and Polymer Science, Nov 14, **2025**.
63. Politecnico di Milano (*Italy*), Department of Chemistry, May 9, **2025**.
62. GlycoMIP Scientists on Screen (with Michael Schulz), virtual, September 18, **2024**.
61. 716th Meeting of the Virginia Blue Ridge Section of the ACS, Lynchburg, VA September 17, **2024**.
60. Waters | Wyatt Virginia Tech Macromolecule Characterization Symposium, Virginia Tech, August 22, **2024**.
59. University of Texas at Austin, Department of Chemistry, April 12, **2024**.
58. Washington University in St. Louis, Department of Chemistry, Oct 12, **2023**.
57. Murray State University, Department of Chemistry, Oct 11, **2023**.
57. Concord University, Department of Physical and Environmental Sciences, Oct 9, **2023**.
56. University of Ghent (*Belgium*), Department of Organic and Macromolecular Chemistry, Aug 18, **2023**.
55. 3M Non-tenured faculty award symposium (virtual), Sep 27, **2022**.
54. University of North Caroline at Greensboro, Department of Chemistry, Sep 16, **2022**.
53. University of Strasbourg (*France*), Charles Sadron Institute, Jun 7, **2022**.
52. Universiteit Leiden (*the Netherlands*) Leiden Institute of Chemistry, Jun 2, **2022**.
51. École Polytechnique Fédérale de Lausanne (EPFL) (*Switzerland*) Institute of Materials, May 25, **2022**.
50. University of Fribourg (*Switzerland*), Department of Chemistry, May 24, **2022**.
49. Johannes Gutenberg University of Mainz (*Germany*), Institute for Organic Chemistry, May 3, **2022**.
48. Hasselt University (*Belgium*), Institute for Materials Research, Apr. 8, **2022**.
47. Wake Forest University Department of Chemistry, Feb 23, **2022**.
46. Carilion Clinic Neurosurgery (Roanoke), Neurosurgeons Academic Session, Feb 1, **2022**.
45. North Carolina A&T and UNC Greensboro Joint School of Nanoscience and Nanoengineering, Dec. 3, **2021**.
44. Appalachian State University Department of Chemistry and Fermentation Sciences, Oct. 15, **2021**.
43. Wyatt Technology Webinar (virtual), Jan 27, **2021**.
42. Maastricht University (*The Netherlands*) Inst. for Technology-Inspired Regenerative Med. (MERLN), Feb. 6, **2020**.
41. Eindhoven University of Technology (*The Netherlands*) Institute for Complex Molecular Systems, Feb. 5, **2020**.
40. Carnegie Mellon University Department of Chemistry, Oct 30, **2019**.
39. Radford University Department of Chemistry, Sep 27, **2019**.
38. Ben Gurion University (*Israel*), Ilse Katz Institute for Nanoscale Science & Technology, Jul 3, **2019**.
37. Virginia Tech, Department of Biochemistry, Apr 15, **2019**.
36. Arizona State University, School of Molecular Sciences, Mar 1, **2019**.
35. Eastman Chemical Company, Kingsport, TN, Feb 25, **2019**.
34. Johannes Gutenberg University of Mainz (*Germany*), Institute for Organic Chemistry, Nov19, **2018**.
33. Boston College, Department of Chemistry, Nov 7, **2018**.
32. University of North Carolina, Charlotte, Department of Chemistry, Oct 1, **2018**.
31. University of Akron, College of Polymer Science and Polymer Engineering, Sep 21, **2018**.
30. Carleton College, Department of Chemistry, Sep 29, **2017**.
29. St. Olaf College, Department of Chemistry, Sep 28, **2017**.
28. University of the Republic (*Uruguay*), Center for Free Radical and Biomedical Research, Jul 14, **2017**.
27. University of Massachusetts, Amherst, Dept. of Chemistry, Mar 30, **2017**.
26. Virginia Tech, Dept. of Chemistry Highlands Seminar Series, Mar 24, **2017**.
25. University of South Carolina, Dept. of Chemistry, Mar 16, **2017**.
24. University of Southern Mississippi, School of High Performance Polymers, Mar 8, **2017**.
23. Florida State University, Dept. of Chemistry, Feb 23, **2017**.
22. University of Florida, Dept. of Chemistry, Feb 21, **2017**.
21. Stanford University, Dept. of Chemistry, Feb 8, **2017**.
20. University of Arizona, Dept. of Chemistry, Feb 6, **2017**.
19. East Carolina University, Dept. of Chemistry, Nov 18, **2016**.
18. Case Western Reserve University, Dept. of Macromolecular Science, Sep 23, **2016**.

17. University of North Carolina, Dept. of Chemistry, Sep 8, **2016**.
16. University of Oregon, Dept. of Chemistry, Mar 11, **2016**.
15. University of Washington, Dept. of Chemistry, Mar 9, **2016**.
14 Washington State University, Dept. of Chemistry, Mar 7, **2016**.
13. Western Carolina University, Department of Chemistry and Physics, Jan 29, **2016**.
12. University of California, San Diego, Department of Chemistry and Biochemistry, Jan 11, **2016**.
11. University of Virginia, Department of Chemistry, Oct 16, **2015**.
10. James Madison University, Department of Chemistry, Sep 25, **2015**.
9. Delaware University, Department of Materials Science, Sep 23, **2015**.
8. East Tennessee State University, Department of Chemistry, Sep 4, **2015**.
7. University of Warwick (*England*), Department of Chemistry, Aug 4, **2015**.
6. Cal Poly San Luis Obispo, Department of Chemistry, May 14, **2015**.
5. College of Charleston, Department of Chemistry, Nov 6, **2014**.
4. Virginia Tech BioBased Materials Center, Mar 28, **2014**.
3. Winthrop University, Department of Chemistry, Geology and Physics, Mar 13, **2014**.
2. Indiana University of Pennsylvania, Department of Chemistry, Feb 28, **2014**.
1. Norfolk State University, Department of Chemistry, Feb 27, **2013**.

RESEARCH SUPPORT

As PI/co-PI at Virginia Tech

Current

IRES: Polymer Science Advancing Biologically-inspired Research Opportunities Across Disciplines (Poly-ABROAD)
National Science Foundation
PI: Matson, co-PI: Michael Schulz
$450,000 8/2025-7/2028

Research Agreement
Saudi Aramco
PI: Matson
$140,000 7/2025 – 6/2026

Rigid Polynorbornenes Prepared by Vinyl Addition Polymerization for Gas Separation Membranes
US Department of Energy
PIs: Matson, Deskmukh, Martin
$1,073,000 8/2024 – 2/2027

Vinyl Addition Polymerization of Norbornene-Benzoladderenes
American Chemical Society Petroleum Research Fund New Directions Award
PI: Matson
$125,000 9/2024 – 8/2026

Light responsive poly(olefin sulfone)s for PFAS-free photoresists with dry development and stripping
Semiconductor Research Corporation
PI: Matson
$315,000 1/2024 – 12/2026 (reduced to $210,000 and ended 12/2025 due to re-organization of SRC)

Activating physical crosslinking in synthetic extracellular matrices by switch peptides
Binational Science Foundation (2022044)
PIs: Matson, Ronit Bitton (Ben Gurion University, Israel)
$207,600, 10/2023 – 9/2027

Developing enhanced sealants for neurosurgery
Commonwealth Health Research Board
PI: Michael Schulz (VT); co-PI: Matson
$200,000, 8/2023 – 7/2025

MIP: Glyco-MIP

National Science Foundation (DMR-1933525)
PIs: Maren Roman (VT), several others
$22,900,000, 8/2020 – 7/2026

Previous

Self-Amplified Depolymerizable Polymers
National Science Foundation, Division of Chemistry, MSN Program (CHE-2003662)
$450,000; 7/2020 – 12/2025

NSF-BSF: Tapered Bottlebrush Block Copolymers: Synthesis, Solution Self-Assembly, and Simulations
National Science Foundation, Binational Science Foundation, Polymers Program (DMR-2104602)
PIs: Matson, Ronit Bitton (Ben Gurion University, Israel); co-PI: Rana Ashkar (VT)
$441,459, 6/2021 – 5/2025

Novel Cellular and Molecular Regulation of Collateral Remodeling in Ischemic Stroke
Delivery of H_2S: Supramolecular and Enzyme-Triggered Strategies for Controlled Release
NIH – National Institute of General Medical Sciences (R01GM123508)
PI: Matson; co-PI: Prof. Khosrow Kashfi (City College of New York)
$1,485,899; 4/2017 – 1/2024

Novel Cellular and Molecular Regulation of Collateral Remodeling in Ischemic Stroke
NIH – National Institute of Neurological Disorders and Stroke (R01NS112541)
PI: Prof. Micelle Theus (VT); co-PIs: Matson, Prof. Hehuang Xie (VT)
$1,733,852; 7/2020 – 6/2023

Functional Bioactive Materials for Gasotransmitter Delivery and Tissue Engineering
Dreyfus Foundation (TC-18-039)
$75,000; 5/2018 – 4/2023

R&D Contract
Pharmaceutical Company
$339,865; 6/2020 – 12/2022

Administrative Supplement for Purchase of a Helium Recovery System
National Institutes of Health
PIs: Matson, Webster Santos (VT)
$151,153; 7/2020 – 6/2021

Mimicking Native Cryptic Sites
Binational Science Foundation (2016096)
PI: Matson; Co-PI: Prof. Ronit Bitton (Ben Gurion University, Israel)
$198,000; 9/2017 – 8/2021

CAREER: Self-Assembled, H_2S-Releasing Gels for Promoting Angiogenesis
National Science Foundation, Division of Materials Research, Biomaterials Program (DMR-1454754)
$530,000; 4/2015 – 03/2021

Self-Assembling Peptide Nanocoils as Templates to Form Chiral Plasmonic Nanoparticles
Virginia Tech Dean's Discovery Fund
PI: Matson; co-PI: Guoliang "Greg" Liu (Virginia Tech)
$18,115; 7/2019 – 6/2020

Tapered Bottlebrush Polymers for Templating Gold and Silver Nanoparticles with Shape Asymmetry
Army Research Office (74464-CH-II)
PI: Matson; co-PI: Guoliang "Greg" Liu (Virginia Tech)

$60,000; 6/2019 – 3/2020

Administrative Supplement for Purchase of a Size Exclusion Chromatography System
National Institutes of Health
$111,000; 8/2018 – 7/2019

Tapered Bottlebrush Polymers: A New Polymer Topology
ACS Petroleum Research Fund, Doctoral New Investigator Grant (54884-DNI7)
$110,000; 9/2015 – 8/2018

pH Responsive-Nanoprobes: A novel therapeutic approach for brain injury
Virginia Tech Institute for Critical Technologies and Applied Science (JFC12-256)
PI: Prof. Michelle Theus (Virginia Tech); co-Is: Matson, Prof. Abby Whittington (Virginia Tech)
$120,000; 7/2016 – 6/2018

H_2S-Releasing Materials for Wound Healing
3M Non-Tenured Faculty Award (14548087)
$45,000; 4/2015 – 3/2018

Traumatic Brain Injury and Regeneration: A Novel Therapeutic Platform for Drug Delivery
Virginia Tech Center for Drug Discovery
PI: Prof. Abby Whittington; co-PIs: Matson, Michelle Theus (Virginia Tech)
$5,000; 1/2016 – 6/2016

Thermoresponsive Peptide Dendrimers
Binational Science Foundation (2012126)
PI: Matson; Co-PI: Prof Ronit Bitton (Ben Gurion University, Israel)
$150,000; 10/2013 – 9/2015

Tapered Bottlebrush Polymers: A New Polymer Architecture
Army Research Office (W911NF-14-1-0322)
$50,000; 8/2014 – 5/2015

One-Pot Bottlebrush Polymers
Oak Ridge Associated Universities, Powe Junior Faculty Enhancement Award
$10,000; 6/2014 – 5/2015

H_2S-Releasing Micelles for Cancer Therapy
Virginia Tech Institute for Critical Technologies and Applied Science (JFC12-256)
PI: Matson; Co-PI: Prof. Carla Finkielstein (Virginia Tech)
$120,000; 7/2013 – 6/2015

As Postdoc

3D Differentiation of Mesenchymal Stem Cells in Peptide Amphiphile Matrices
National Institute of Dental and Craniofacial Research (1F32AR061955-01)
$48,000; 11/2011 – 8/2012

Development of Hyaluronic Acid-Peptide Amphiphile Nanosacs for Systemic Delivery of Drugs, Proteins, and Signals
IBNAM-Baxter Early Career Development Award in Bioengineering
$110,000; 11/2009 – 10/2011