

# Curriculum Vitae

John B. Matson

Virginia Tech  
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## PROFESSIONAL POSITIONS

### **Virginia Tech**

|   |                |
|---|----------------|
| Department of Chemistry, Associate Chair              | Blacksburg, VA |
| Professor of Chemistry                                | 2022-present   |
| <i>Dr. AC Lilly Jr.</i> Faculty Fellow of Nanoscience | 2021-present   |
| Associate Professor of Chemistry                      | 2020-present   |
| Assistant Professor of Chemistry                      | 2018-2021      |
|   | 2012-2018      |

## EDUCATION and TRAINING

### **Northwestern University**

|                            |             |
|----------------------------|-------------|
| <i>Postdoctoral Fellow</i> | Chicago, IL |
| Advisor: Samuel I. Stupp   | 2009-2012   |

### **California Institute of Technology**

|  |              |
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| <i>Ph.D.</i> (defended Sept. 4, 2009; awarded June 10, 2010)                         | Pasadena, CA |
| Advisor: Robert H. Grubbs  | 2004-2009    |
| Thesis: Applications and extensions of living ring-opening metathesis polymerization |              |

### **Washington University in St. Louis**

|                                    |               |
|------------------------------------|---------------|
| <i>A.B.</i> (awarded May 10, 2004) | St. Louis, MO |
| Majors: Chemistry and German       | 2000-2004     |
| 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 <i>European Polymer Journal</i> Award  | 2022 |
| <i>Dr. AC Lilly Jr.</i> 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

106. Kaloss, A. M.; Lyles, K.; Groot, N. A.; Zhu, Y.; Lin, Y.; Xie, H.; **Matson, J. B.**; Theus, M. H.\* “Genetic and pharmacological modulation of the EphA4/Tie2 Axis augments the pial collateral response following ischemic stroke” **2024**, *submitted*.
105. 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” **2024**, *in revision*.
104. 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)” **2024**, *in review*.

#### Accepted

#### In Press

#### Published

103. Liu, J.; Blossch, 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
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](#)
100. Alaboalirat, M.; Scannelli, S. J.; Rahmaminejad, 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<sub>2</sub>S Donor Conjugate with Complexed Fe<sup>2+</sup>” *Angew. Chem. Int. Ed.* **2023**, e202302303. doi: 10.1002/anie.202302303  
\*\*Selected as an *Angewandte Chemie* ‘Hot Paper’
91. Kadlec, M.; Chinn, A. F.; Novy, P. Garcia-Vazquez, F. A.; Ros-Santaella, J. L.; **Matson, J. B.**\*; Pintus, E.\* “N-thiocarboxyanhydrides, amino acid-derived enzyme-activated H<sub>2</sub>S 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<sub>2</sub>S 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( $\beta$ -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<sub>2</sub>S Donors: *N*-thiocarboxyanhydrides that release COS/H<sub>2</sub>S 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- $\beta$ -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<sub>2</sub>S 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.<sup>†</sup>; Zhu, Y.<sup>†</sup>; **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<sub>2</sub>S-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<sub>2</sub>S 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<sub>2</sub>S 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.<sup>†</sup>; Carrazzone, R. J.<sup>†</sup>; **Matson, J. B.\*** “The Benefits of Macromolecular/Supramolecular Approaches in H<sub>2</sub>S Delivery: A Review of Polymeric and Self-Assembled H<sub>2</sub>S Donors” *Antioxid. Redox Signal.* **2020**, *32*, 79-95. doi: 10.1089/ars.2019.7864
58. Kowalski, E. A.; Chen, J.; Hazy, A.; Fritsch, L. E.; Gudenschwager-Basso, E. K.; Chen, M.; Wang, X.; Qian, Y.; Zhou, M.; Byerly, M.; Pickrell A. M.; **Matson, J. B.**; Allen, I. C.; Theus, M. H.\* “Peripheral Loss of EphA4 Ameliorates TBI-Induced Neuroinflammation and Tissue Damage” *J. Neuroinflammation* **2019**, *210*. doi: 10.1186/s12974-019-1605-2
57. Wang, Y.; **Matson, J. B.\*** “Supramolecular nanostructures with tunable donor loading for controlled H<sub>2</sub>S release” *ACS Appl. Bio Mater.* **2019**, *2*, 5093-5098. doi: 10.1021/acsbm.9b00768
56. Longchamp, A.; Kaur, K.; Macabrey, D.; Dubuis, C.; Corpataux, J. M.; Déglise, S.; **Matson, J. B.\***; Allagnat, F.\* “H<sub>2</sub>S-releasing peptide hydrogel limits the development of intimal hyperplasia in human vein segments” *Acta Biomater.* **2019**, *97*, 374-384. doi: 10.1016/j.actbio.2019.07.042
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<sub>2</sub>S Donor Conjugates” *ACS Chem. Biol.* **2019**, *14*, 1129-1134. doi: 10.1021/acscchembio.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<sub>2</sub>S” *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<sub>2</sub>S 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<sub>2</sub>S 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.<sup>†</sup>; Zhou, M.<sup>†</sup>; 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
45. Wang, Y.; Kaur, K.; Scannelli, S. J.; Bitton, R.; **Matson, J. B.**\* “Self-Assembled Nanostructures Regulate H<sub>2</sub>S Release from Constitutionally Isomeric Peptides” *J. Am. Chem. Soc.* **2018**, *140*, 14945-14951. doi: 10.1021/jacs.8b09320  
\*\**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/acsmi.8b08480
42. Powell, C. R.; Dillon, K. M.; Wang, Y.; Carrazzone, R. J. **Matson, J. B.**\* “A Persulfide Donor Responsive to Reactive Oxygen Species: Insights into Reactivity and Therapeutic Potential” *Angew. Chem. Int. Ed.* **2018**, *57*, 6324-6328. doi: 10.1002/anie.201803087  
\*\**Highlighted in Science Trends, May 2018*

41. Powell, C. R.; Dillon, K. M.; **Matson, J. B.**\* “A Review of Hydrogen Sulfide (H<sub>2</sub>S) Donors: Chemistry and Potential Therapeutic Applications” *Biochem. Pharmacol.* **2018**, *149*, 110-123. doi: 10.1016/j.bcp.2017.11.014
40. Arrington, K. J.; **Matson, J. B.**\* “Assembly of a Visible Light Photoreactor: An Inexpensive Tool for Bottlebrush Polymer Synthesis via Photoiniferter Polymerization” *Polym. Chem.* **2017**, *8*, 7452-7456. doi: 10.1039/c7py01741c
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
38. Foster, J. C.; Radzinski, S.C.; **Matson, J. B.**\* “Graft Polymer Synthesis by RAFT Transfer-to” *J. Poly. Sci., Part A: Polym. Chem.* **2017**, *55*, 2865-2876. doi: 10.1002/pola.28621  
\*\*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<sub>2</sub>S-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
32. Qian, Y.; **Matson, J. B.**\* “Gasotransmitter Delivery via Self-Assembling Peptides: Treating Diseases with Natural Signaling Gases” *Adv. Drug. Deliv. Rev.* **2017**, *110-111*, 137-156. doi:10.1016/j.addr.2016.06.017  
\*\*Invited submission to special issue on peptides and peptide conjugates in medicine
31. Powell, C. R.; Foster, J. C.; Okyere, B.; Theus, M. H.; **Matson, J. B.**\* “Therapeutic Delivery of H<sub>2</sub>S via COS: Small Molecule and Polymeric Donors with Benign Byproducts” *J. Am. Chem. Soc.* **2016**, *138*, 13477-13480. doi: 10.1021/jacs.6b07204
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.<sup>†</sup>; Radzinski, S. C.<sup>†</sup>; 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
24. Radzinski, S. C.<sup>†</sup>; Foster, J. C.<sup>†</sup>; **Matson, J. B.**\* “Synthesis of Bottlebrush Polymers via Transfer-To and Grafting-Through Approaches Using a RAFT Chain Transfer Agent with a ROMP-Active Z-Group” *Polym. Chem.* **2015**, *6*, 5643-5652. doi: 10.1039/c4py01567c.  
\*\*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<sub>2</sub>S-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.**<sup>†</sup>; 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.**<sup>†</sup>; 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.**<sup>†</sup>; 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
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<sub>2</sub>S 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<sub>2</sub>S 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)**

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***

1. Dr. Yin Wang. 2017-2020. Current position: Associate Professor of Pharmacy, Shanghai Jiao Tong University

### ***PhD students graduated from Matson group***

15. Dr. Zhao Li, Defended PhD on August 10, 2023. Current position: Levena Biopharma
14. Dr. Samantha Scannelli, Defended PhD on May 9, 2023. Current position: VB Cosmetics
13. Dr. Yumeng (Jackie) Zhu. Defended PhD on April 27, 2023. Current position: Arrowhead Pharma
12. Dr. Sarah Blossch. Defended PhD on July 7, 2022. Current position: AGC Chemicals Americas, Inc.
11. Dr. Mohammed Alaboalirat. Defended PhD on July 6, 2022. Current position: Saudi Aramco
10. Dr. Anastasia Arrington. Defended PhD on June 9, 2022. Current position: Intel Corp.
9. Dr. Kearsley Dillon. Defended PhD on July 7, 2021. Current position: Afton Chemical
8. Dr. Ryan Carrazzone. Defended PhD on Jun 9, 2021. Current position: Intel Corp.
7. Dr. Kuljeet Kaur. Defended PhD on Dec 3, 2019. Current position: Postdoc at EPFL (*Switzerland*)
6. Dr. Yun Qian. Defended PhD on May 13, 2019. Current position: Levena Biopharma
5. Dr. Mingjun Zhou. Defended PhD on Apr 30, 2019. Current position: Yantai University in China
4. Dr. Chad Powell. Defended PhD on Apr 25, 2019. Current position: Solvay
3. Dr. Kyle Arrington. Defended PhD on Apr 30, 2018. Current position: Intel Corp.
2. Dr. Scott Radzinski. Defended PhD on Mar 23, 2017. Current position: Secant Group
1. Dr. Jeffrey C. Foster. Defended PhD on Mar 22, 2017. Current position: Oak Ridge National Lab

## **TEACHING EXPERIENCE**

### *Virginia Tech*

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

### *American Chemical Society*

|   |              |
|---|--------------|
| <b>Polymer Chemistry: Principles and Practice Short Course Instructor</b> | 2017-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 Paulo, 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), Research Corporation

## 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.*, *Synlett*

## Symposium organization

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 *Pacificchem 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 *Pacificchem 2021* for symposium titled “Synthesis and Applications of Molecular Bottlebrush Polymers” Honolulu, HI, Dec 16-21, **2021**.
7. Co-organizer for *261<sup>st</sup> 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 *2<sup>nd</sup> American Gasotransmitter Symposium* Eugene, OR, May 18-19, **2019**.
5. Co-organizer for *257<sup>th</sup> 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 *255<sup>th</sup> 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 *1<sup>st</sup> American Gasotransmitter Symposium* Atlanta, GA, April 22-23, **2017**.
2. Co-organizer for *253<sup>rd</sup> 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 *251<sup>st</sup> 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)

91. Matson, J. B. “Cellular Uptake and Antioxidant Activity of H<sub>2</sub>S-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<sub>2</sub>S 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<sub>2</sub>S-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” *264<sup>th</sup> American Chemical Society National Meeting*, Chicago, IL, Aug 21-25, **2022**.
81. Matson, J. B. “Tapered bottlebrush polymers: Synthesis, SANS, and self-assembly” *264<sup>th</sup> 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” *263<sup>rd</sup> American Chemical Society National Meeting*, San Diego, CA, Mar 20-24, **2022**.
74. Matson, J. B. “Self-Amplified Depolymerization of Polythiourethanes” *263<sup>rd</sup> 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” *Pacificchem 2021*, Virtual, Dec. 16-21, **2021**.
71. Matson, J. B. “Applications of RDRP for the Construction of Complex Polymer Topologies” *Pacificchem 2021*, Virtual, Dec. 16-21, **2021**.
70. Matson, J. B. “Tapered bottlebrush polymers: Synthesis, characterization, and self-assembly” *Pacificchem 2021*, Virtual, Dec. 16-21, **2021**.
69. Matson, J. B. “Triggered and Controlled Delivery of Reactive Sulfur Species: From Small Molecules to Materials” *Pacificchem 2021*, Virtual, Dec. 16-21, **2021**.
68. Matson, J. B. “Covalent and Supramolecular Materials for Delivery of Bioactive Gases” *Pacificchem 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: Templatation of helical Ag nanoparticle arrays using supramolecular polymers based on peptides" *262<sup>nd</sup> American Chemical Society National Meeting*, Atlanta, GA, Aug 22-26, **2021**.
65. Matson, J. B. "Helical supramolecular polymers: Self-assembly, bioactivity, and catalysis" *262<sup>nd</sup> 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" *261<sup>st</sup> American Chemical Society National Meeting*, virtual, Apr 5-16, **2021**.
63. Matson, J. B. "Supramolecular nanohelices for drug delivery, ion-transport, and sensing" *260<sup>th</sup> 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<sub>2</sub>S delivery" *47<sup>th</sup> IUPAC World Chemistry Congress*, Paris, France, Jul 5-12, **2019**.
59. Matson, J. B. "New materials by blending commodity polymers with polysaccharides" *47<sup>th</sup> 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" *2<sup>nd</sup> American Gasotransmitter Symposium*, Eugene, OR May 18-19, **2019**.
56. Matson, J. B. "Self-assembled tetrapeptide nanocoils for delivery of hydrogen sulfide" *257<sup>th</sup> 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" *257<sup>th</sup> 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)" *257<sup>th</sup> 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)" *4<sup>th</sup> Fusion Functional Polymeric Materials Conference*, Nassau, Bahamas, Jun 5-8, **2018**.
49. Matson, J. B. "Chemical Tools for Delivery of H<sub>2</sub>S and Related Species: Small Molecules, Polymers, and Hydrogels" *5<sup>th</sup> World Congress on H<sub>2</sub>S 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)” *255<sup>th</sup> 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<sub>2</sub>S” *255<sup>th</sup> 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” *255<sup>th</sup> 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” *255<sup>th</sup> 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” *255<sup>th</sup> ACS National Meeting*, New Orleans, LA, Mar 18-22, **2018**.
43. Zhou, M.; Matson, J. B. “Thermoresponsive Dendritic Elastin-Like Peptides” *254<sup>th</sup> ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.
42. Arrington, K. J.; Matson, J. B. “Compatibilizing Methylcellulose and Polyethylene for Sustainable Materials” *254<sup>th</sup> ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.
41. Kaur, K.; Qian, Y.; Foster, J. C.; Matson, J. “Thiooxime Containing H<sub>2</sub>S Releasing Peptide Hydrogels: An Insight into Stability and Self-Assembly” *254<sup>th</sup> 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<sub>2</sub>S Release” *254<sup>th</sup> 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” *254<sup>th</sup> 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” *254<sup>th</sup> ACS National Meeting*, Washington, D.C., Aug 20-24, **2017**.
37. Matson, J. B. “The Transfer-To Method in Bottlebrush Polymer Synthesis” *46<sup>th</sup> IUPAC World Chemistry Congress*, São Paulo, Brazil, Jul 9-14, **2017**.
36. Matson, J. B. “Materials for H<sub>2</sub>S Delivery: Polymer micelles and peptide-based gels” *1<sup>st</sup> 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” *253<sup>rd</sup> 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” *253<sup>rd</sup> 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” *253<sup>rd</sup> 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” *253<sup>rd</sup> 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<sub>2</sub>S), a biologically relevant signaling gas” *253<sup>rd</sup> 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” *253<sup>rd</sup> 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<sub>2</sub>S 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<sub>2</sub>S-Releasing Micelles" *251<sup>st</sup> ACS National Meeting*, San Diego, CA, Mar 13-17, **2016**.
23. Matson, J. B. "Thiol-Triggered Hydrogen Sulfide-Releasing Gels" *251<sup>st</sup> ACS National Meeting*, San Diego, CA, Mar 13-17, **2016**.
22. Matson, J. B. "The Transfer-To Approach to Bottlebrush Polymer Synthesis" *2<sup>nd</sup> 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" *249<sup>th</sup> 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" *249<sup>th</sup> 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" *249<sup>th</sup> ACS National Meeting*, Denver, CO, Mar 22-26, **2015**.
17. Matson, J. B. "Materials for Therapeutic Delivery of H<sub>2</sub>S" *4<sup>th</sup> 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<sub>2</sub>S-Releasing Polymers" *248<sup>th</sup> 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" *247<sup>th</sup> 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" *247<sup>th</sup> 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" *245<sup>th</sup> 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" *22<sup>nd</sup> 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" *241<sup>st</sup> ACS National Meeting*, Anaheim, CA, Mar 27-31, **2011**.
7. Virgil, S.C.; Kuhn, K. M.; Matson, J. B.; Golsiz, S. R.; Hazari, N.; Grubbs, R. H.; Bercaw, J. E.; Stoltz, B. M. "Automation and robotics in an academic organometallic chemistry research" *240<sup>th</sup> 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" *237<sup>th</sup> 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" *228<sup>th</sup> 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" *228<sup>th</sup> ACS National Meeting*, Philadelphia, PA, Aug 22-26, **2004**.

#### **INVITED DEPARTMENTAL AND COMPANY SEMINARS**

58. Washington University in St. Louis, Department of Chemistry, October 12, **2023**.
57. Murray State University, Department of Chemistry, October 11, **2023**.
57. Concord University, Department of Physical and Environmental Sciences, October 9, **2023**.
56. University of Ghent (*Belgium*), Department of Organic and Macromolecular Chemistry, August 18, **2023**.
55. 3M Non-tenured faculty award symposium (virtual), Sep 27, **2022**.
54. University of North Carolina at Greensboro, Department of Chemistry, Sep 16, **2022**.
53. University of Strasbourg (*France*), Charles Sadron Institute, June 7, **2022**.
52. Universiteit Leiden (*the Netherlands*) Leiden Institute of Chemistry, June 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, Nov 19, **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**

*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

*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

*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 – 5/2024

*MIP: Glyco-MIP*  
National Science Foundation (DMR-1933525)  
PIs: Maren Roman (VT), several others  
\$22,900,000, 8/2020 – 7/2025

*Self-Amplified Depolymerizable Polymers*  
National Science Foundation, Division of Chemistry, MSN Program (CHE-2003662)  
\$450,000, 7/2020 – 6/2023

*Delivery of H<sub>2</sub>S: 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

## **Previous**

*Novel Cellular and Molecular Regulation of Collateral Remodeling in Ischemic Stroke*  
NIH – National Institute of Neurological Disorders and Stroke (R01GM123508)  
PI: Prof. Michelle 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<sub>2</sub>S-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<sub>2</sub>S-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<sub>2</sub>S-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