

Curriculum Vitae

John B. Matson

Virginia Tech
Department of Chemistry
313B Davidson Hall
Blacksburg, VA 24061
(540) 231-3329
jbmatson@vt.edu

PROFESSIONAL POSITIONS

Virginia Tech

Associate Professor
Assistant Professor

Blacksburg, VA
2018-present
2012-2018

EDUCATION and TRAINING

Northwestern University

Postdoctoral Fellow
Advisor: Samuel I. Stupp

Chicago, IL
2009-2012

California Institute of Technology

Ph.D. (defended Sept. 4, 2009; awarded June 10, 2010)
Advisor: Robert H. Grubbs
Thesis: Applications and extensions of living ring-opening metathesis polymerization

Pasadena, CA
2004-2009

Washington University in St. Louis

A.B. (awarded May 10, 2004)
Majors: Chemistry and German
Summa Cum Laude
Research Advisor: Karen L. Wooley

St. Louis, MO
2000-2004

AWARDS/HONORS

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	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

TEACHING EXPERIENCE

Virginia Tech

Organic Chemistry II (CHEM 2536)
Synthesis and Reactions of Macromolecules (CHEM 5704)
Advanced Macromolecular Chemistry (CHEM 6564)

Spring 2014-2016, 2018
Fall 2012-2018
Spring 2019

JOURNAL PUBLICATIONS

As PI at Virginia Tech

Submitted/In Press

54. Kowalski, E. A.; Chen, J.; Qian, Y.; Chen, M.; Wang, X.; Hazy, A.; Zhou, M.; Byerly, M.; Pickrell A. M.; **Matson, J. B.**; Allen, I. C.; Theus, M. H.* “EphA4 Inhibition Alters the Neuroimmune Response Providing Neuroprotection Following Traumatic Brain Injury” **2019**, *submitted*.
53. Longchamp, A.; Kaur, K.; Macabrey, D.; Dubuis, C.; Corpataux, J. M.; Déglise, S.; **Matson, J. B.***; Allagnat, F.* “An H₂S-releasing Peptide Hydrogel Limits the Development of Intimal Hyperplasia in Human Vein Segments” **2019**, *submitted*.
52. Arrington, K. J.; Hagg, J. V.; French, E.; Murayama, M.; Edgar, K. J.; **Matson, J. B.*** “Toughening Cellulose: Compatibilizing Polybutadiene and Cellulose Triacetate Blends” **2019**, *submitted*.
51. Volokhova, A. S.; Waugh, J. B.; **Matson, J. B.*** “Effects of Graft Copolymer Compatibilizers in Blends of Cellulose Triacetate and Polylactic Acid” **2019**, *in revision*.
50. Qian, Y.; Kaur, K.; Foster, J. C.; **Matson, J. B.*** “Supramolecular Tuning of H₂S Release from Aromatic Peptide Amphiphile Gels: Effect of Core Unit Substituents” **2019**, *accepted*. doi: 10.1021/acs.biomac.8b0173
49. Foster, J. C.; Carrazzone, R. C.; Spear, N. J.; Radzinski, S. C.; Arrington, K. J.; **Matson, J. B.*** “Tuning H₂S Release by Controlling Mobility in a Micelle Core” *Macromolecules*, **2019**, *accepted*. doi: 10.1021/acs.macromol.8b02315

Published

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**, *in press*. 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**, *in press*. 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**, *in press*. doi: 10.1021/acs.macromol.8b02366
45. Wang, Y.; Kaur, K.; Scannelli, S. J.; Bitton, R.; **Matson, J. B.*** “Self-Assembled Nanostructures Regulate H₂S 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/acsami.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 (H₂S) 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
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.*** "H₂S-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
31. Powell, C. R.; Foster, J. C.; Okyere, B.; Theus, M. H.; **Matson, J. B.*** "Therapeutic Delivery of H₂S 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.; 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
24. Radzinski, S. C.; Foster, J. C.; **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.
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 H₂S-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
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

†denotes co-first author publications

*denotes corresponding author publications

BOOK CHAPTERS

1. Kaur, K.; Qian, Y.; **Matson, J. B.** “H₂S 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
2. **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.

PATENTS

Provisional

3. **Matson, J. B.**; Radzinski, S. C.; Foster, J. C. “Tapered (Cone-Shaped) Polymer Nanostructures” US 62/547,910
2. Arrington, K. J.; Chen, J.; Edgar, K. J.; **Matson J. B.** “Multiblock Copolymers of Polysaccharides and Synthetic Polymers and Their Use in Compatibilizing Polymer Blends” VTIP-18-101
1. **Matson, J. B.** Powell, C. R. “Persulfide Donor Compounds” VTIP-18-109

Full

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

PROFESSIONAL SERVICE

International Union of Pure and Applied Chemistry (IUPAC)

Member of Subcommittee on Polymer Terminology (SPT) and Subcommittee on Polymer Education (SPed) in Division IV (Polymer Division) (2017-present)
 Young Observer for 2017 General Assembly (São Paulo, Brazil)

Editorial Advisory Boards

Polymer International (2017-present)
Cambridge Scholars (2017-present)

Reviewer for funding agencies

National Science Foundation, ACS Petroleum Research Fund, Research Corporation, British Heart Foundation

Reviewer for journals

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

Symposium organization

8. Co-organizer for Pacificchem 2020 for the symposium entitled “Nitric Oxide, Carbon Monoxide, and Hydrogen Sulfide as Potential Therapeutic Agents: The 4th American Gasotransmitter Symposium” Honolulu, HI, Dec 15-20, **2020**.
7. Co-organizer for *Pacificchem 2020* for the symposium entitled “Synthesis and Applications of Molecular Bottlebrush Polymers” Honolulu, HI, Dec 15-20, **2020**.
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**.

ORAL CONFERENCE PRESENTATIONS (presenting author underlined)

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, July 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, July 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, July 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, June 5-8, **2018**.
49. Matson, J. B. “Chemical Tools for Delivery of H₂S and Related Species: Small Molecules, Polymers, and Hydrogels” *5th World Congress on H₂S 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, March 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 H₂S” *255th ACS National Meeting*, New Orleans, LA, March 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, March 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, March 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, March 18-22, **2018**.
43. Zhou, M.; Matson, J. B. “Thermoresponsive Dendritic Elastin-Like Peptides” *254th ACS National Meeting*, Washington, D.C., August 20-24, **2017**.
42. Arrington, K. J.; Matson, J. B. “Compatibilizing Methylcellulose and Polyethylene for Sustainable Materials” *254th ACS National Meeting*, Washington, D.C., August 20-24, **2017**.
41. Kaur, K.; Qian, Y.; Foster, J. C.; Matson, J. “Thiooxime Containing H₂S Releasing Peptide Hydrogels: An Insight into Stability and Self-Assembly” *254th ACS National Meeting*, Washington, D.C., August 20-24, **2017**.
40. Qian, Y.; Kaur, K.; Foster, J.; Matson, J. “Self-assembled Aromatic Peptide Hydrogels with Controlled H₂S Release” *254th ACS National Meeting*, Washington, D.C., August 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., August 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., August 20-24, **2017**.
37. Matson, J. B. “The Transfer-To Method in Bottlebrush Polymer Synthesis” *46th IUPAC World Chemistry Congress*, São Paulo, Brazil, July 9-14, **2017**.
36. Matson, J. B. “Materials for H₂S Delivery: Polymer micelles and peptide-based gels” *1st American Gasotransmitter Symposium*, Atlanta, GA, April 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, April 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, April 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, April 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, April 2-6, **2017**.
31. Matson, J. B. Foster, J. C. “Polymeric materials for delivery of hydrogen sulfide (H₂S), a biologically relevant signaling gas” *253rd ACS National Meeting*, San Francisco, CA, April 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, April 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 H₂S 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, July 21, **2016**.
24. Foster, J. C.; Matson, J. B. "Morphological Control of the Release Profile of H₂S-Releasing Micelles" *251st ACS National Meeting*, San Diego, CA, March 13-17, **2016**.
23. Matson J. B. "Thiol-Triggered Hydrogen Sulfide-Releasing Gels" *251st ACS National Meeting*, San Diego, CA, March 13-17, **2016**.
22. Matson, J. B. "The Transfer-To Approach to Bottlebrush Polymer Synthesis" *2nd Fusion Functional Polymeric Materials Conference*, Ascot, England, August 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, July 5-6, **2015**.
20. Matson, J. B.; Carter, J. M. "Self-Assembling Peptide Materials for Hydrogen Sulfide Delivery" *249th ACS National Meeting*, Denver, CO, March 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, March 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, March 22-26, **2015**.
17. Matson, J. B. "Materials for Therapeutic Delivery of H₂S" *4th Zing Polymer Chemistry Conference*, Cancun, Mexico, December 10-13, **2014**.
16. Foster, J. C.; Matson, J. B. "Polymer Functionalization with Thiooximes: A Facile Route to H₂S-Releasing Polymers" *248th ACS National Meeting*, San Francisco, CA, August 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, March 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, March 16-20, **2014**.
13. Matson, J. B.; Foster, J. C. "Materials for Therapeutic Signaling Gas Delivery" *Functional Polymeric Materials*, Cancun, Mexico, February 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, October 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, April 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, June 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, June 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, March 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, August 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, March 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, September 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, September 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, July 29-August 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, August 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, August 22-26, **2004**.

INVITED DEPARTMENTAL SEMINARS

34. University of Mainz (Germany), Institute of 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, Sept. 21, **2018**.
30. Carleton College, Department of Chemistry, Sept. 29, **2017**.
29. St. Olaf College, Department of Chemistry, Sept. 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, Sept. 23, **2016**.
17. University of North Carolina, Dept. of Chemistry, Sept. 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, January 29, **2016**.
12. University of California, San Diego, Department of Chemistry and Biochemistry, January 11, **2016**.
11. University of Virginia, Department of Chemistry, October 16, **2015**.
10. James Madison University, Department of Chemistry, September 25, **2015**.
9. Delaware University, Department of Materials Science, September 23, **2015**.
8. East Tennessee State University, Department of Chemistry, September 4, **2015**.
7. University of Warwick (England), Department of Chemistry, August 4, **2015**.
6. Cal Poly San Luis Obispo, Department of Chemistry, May 14, **2015**.
5. College of Charleston, Department of Chemistry, November 6, **2014**.
4. Virginia Tech BioBased Materials Center, March 28, **2014**.

3. Winthrop University, Department of Chemistry, Geology and Physics, March 13, **2014**.
2. Indiana University of Pennsylvania, Department of Chemistry, February 28, **2014**.
1. Norfolk State University, Department of Chemistry, February 27, **2013**.

RESEARCH SUPPORT

As PI/co-PI at Virginia Tech

Current

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

Mimicking Native Cryptic Sites
Binational Science Foundation (2016096)
Co-PI: Prof. Ronit Bitton (Ben Gurion University, Israel)
\$198,000 (Matson: 63%); 9/2017 – 8/2021

Delivery of H₂S: Supramolecular and Enzyme-Triggered Strategies for Controlled Release
NIH – National Institute of General Medical Sciences (R01GM123508)
Co-PI: Prof. Khosrow Kashfi (City College of New York)
\$1,485,899 (Matson: 90%); 4/2017 – 1/2022

CAREER: Self-Assembled, H₂S-Releasing Gels for Promoting Angiogenesis
National Science Foundation, Division of Materials Research, Biomaterials Program (DMR-1454754)
\$530,000; 4/2015 – 3/2020

Previous

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)
Co-PIs: Prof. Michelle Theus (Virginia Tech); Prof. Abby Whittington (Virginia Tech)
\$120,000 (Matson: 13%); 7/2016 – 6/2018

H₂S-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
\$5,000 (Matson: 38%); 1/2016 – 6/2016

Thermoresponsive Peptide Dendrimers
Binational Science Foundation (2012126)
Co-PI: Prof Ronit Bitton (Ben Gurion University, Israel)
\$150,000 (Matson: 50%); 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

H₂S-Releasing Micelles for Cancer Therapy
Virginia Tech Institute for Critical Technologies and Applied Science (JFC12-256)
Co-PI: Prof. Carla Finkielstein (Virginia Tech)
\$120,000 (Matson: 80%); 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