

The Blue Ridge Chemist

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University of Lynchburg Hosts the September Meeting



Meeting Information

- 716th Meeting of the Virginia Blue Ridge Section, American Chemical Society
- John Matson (Virginia Tech) will speak on the application of organic and polymer chemistry in the delivery of therapeutic small molecules.
- Campus Maps at University of Lynchburg: <https://www.lynchburg.edu/visit/travel-and-maps/>
- **Parking:** After 5:00 pm, parking is allowed anywhere except in handicap or service spaces.
- All meeting events will take place in the Drysdale Student Center.

Agenda for Tuesday, September 17, 2024

- 6:00 PM Dinner, Burton Dining Hall, Drysdale Student Center (\$10 per person)
 - **Those coming for dinner: Please RSVP before 5 PM on Monday, September 16** by sending email to Dave Hobart (hobart_d@lynchburg.edu)
- 6:45 PM to 7:30 PM Presentation by Dr. Matson, East Room, Drysdale Student Center

Keynote Speaker: John B. Matson

Professor Matson received his undergraduate degree at Washington University (St. Louis) in 2004, majoring in Chemistry and German. John conducted undergraduate research with Karen Wooley. He then moved to Caltech to pursue a PhD in the area of polymer synthesis with Robert Grubbs. John graduated in 2009 and moved to Northwestern University where he was an NIH Postdoctoral Scholar working on peptide-based biomaterials with Sam Stupp. In 2012 he began his independent career at Virginia Tech in the Department of Chemistry, where he was promoted to Associate Professor in 2018 and Professor in 2021. In 2020, he was named the Dr. A. C. Lilly, Jr. Faculty Fellow in Nanoscience. His research focuses on macromolecular and supramolecular chemistry with applications in biology, medicine, and sustainability. He is a member of the IUPAC Polymer Division and currently serves as the Secretary for the IUPAC Subcommittee for Polymer Terminology.



Presentation Abstract: Therapeutic Delivery of Hydrogen Sulfide.

Despite its reputation as a foul-smelling and toxic pollutant, hydrogen sulfide (H_2S) is a vital biological signaling gas, termed a gasotransmitter. We develop chemical tools to study the biological roles of H_2S , related gasotransmitters, and other reactive sulfur species (RSS), as well as investigate their potential as therapeutics for a variety of diseases and conditions. Most biological studies on H_2S have involved sulfide salts, which have no tissue specificity, fast release, and the potential for off-target effects. We address these shortcomings by developing new molecules that decompose in a well-defined manner to release H_2S or other RSS with controllable triggers and release kinetics. These small molecules are then incorporated into new materials, which can offer localized delivery with tunable kinetics. Our platforms include soluble polymers, polymer assemblies, and peptide-based hydrogels designed to release therapeutically relevant concentrations of H_2S and other RSS with controllable kinetics. We focus on using these materials as therapeutics for treating cardiovascular disease and cancer.

