



UNIVERSITY OF MINNESOTA  
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# Department of Chemistry

## Seminar

9:45 a.m. Thursday, February 3 • 331 Smith Hall



Associate Professor

### Brent Sumerlin

Department of Chemistry  
Southern Methodist University, Dallas TX

*New Stimuli-Responsive Macromolecules:  
Polymer-Protein Bioconjugates  
and "Sweet Tooth" Micelles*

Research interests:

Interface of polymer, organic, and biochemistries with particular focus on fusing the fields to prepare novel materials with hybrid properties.

Website: <http://smu.edu/chemistry/sumerlin.asp>

### Abstract

Combining the utility of controlled polymerization techniques with the versatility of other recently developed synthetic methods allows streamlined access to functional polymers with well-defined features. We have prepared a variety of responsive materials by employing reversible addition-fragmentation chain transfer (RAFT) polymerization and highly efficient postpolymerization functionalization via copper-catalyzed azide-alkyne cycloaddition, Diels-Alder, and thiol-ene reactions. Capitalizing on the utility of these synthetic tools facilitates the investigation of polymeric materials with unique stimuli-responsive behavior in aqueous solutions. This presentation will highlight recent advances in the investigation of temperature- and redox-responsive hydrogels, cancer-targeting micelles, smart polymer-protein bioconjugates, sugar-responsive "schizophrenic" micelles, and dynamic-covalent macromolecular assemblies.

Host: Professor Marc Hillmyer

Refreshments will be served prior to the seminar.