

Webinar: 9:00 am Friday, February 24

Location: Science 1 - room 1002

Host: Kelly Burke

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**Abstract:** Materials found in nature have a variety of properties and functions that have yet to be recapitulated in modern synthetic materials. Using semisynthetic and biologically derived macromolecules our group hopes to create soft materials that capture the form and function of biological tissues. Using a benchtop bioreactor we isolate large quantities of proteins, nucleic acids, and polysaccharides which serve as sustainable and biocompatible precursors to our materials. In this lecture we will discuss our progress towards isolating plasmid DNA specifically, its purification, and finally its subsequent use in bulk hydrogels. Using newly developed covalent and supramolecular crosslinkers, we demonstrate new types of DNA materials which leverage the inherent topological form and supramolecular interactions native to double stranded DNA. These developments are aimed towards further transforming DNA from genetic material to commodity polymer.