Northeastern University
College *of* Engineering

Please join us for a
Special Chemical Engineering & Bioengineering Seminar

Friday, April 12, 2013
108 West Village H
11:45 a.m. - 1:00 p.m.

"Reconfigurable Polymers and Interfaces as Next-Generation Biomaterials"

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ABSTRACT

Complexity in materials and systems has permeated nearly every avenue of technology including medicine. Medical implants, for the most part, have only recently adopted advances in biomaterials including functional polymers. Reconfigurable polymers and interfaces may serve as both next-generation materials for medical devices as well as tools to understand how our body can interpret and respond to implants. Recent contributions from our group in this area will be presented. First, I will discuss the design, synthesis, and characterization of a new class of biodegradable elastomers for use as soft tissue implants. These materials are prepared using chemistry that allow for reconfigurable networks, which confers distinct advantages in processing and properties. Next, I will describe the use of reconfigurable surfaces as a tool for deconstructing fundamental processes that are manifested by cell-topography interactions. Taken together, these results present new functionalities that will significantly advance the next-generation of medical materials.

BIOGRAPHY: Dr. Christopher Bettinger is currently an Assistant Professor at Carnegie Mellon University in the Departments of Materials Science and Engineering and Biomedical Engineering. He directs the laboratory for Biomaterials-based Microsystems and Electronics at CMU, which is broadly interested in the design of novel materials and interfaces that promote the integration of medical devices with the human body. Chris has received many honors including the National Academy of Sciences Award for Initiatives in Research, MIT Department of Materials Science and Engineering Award for "Outstanding PhD Thesis", the ACS AkzoNobel Award for Polymer Chemistry, the Tissue Engineering and Regenerative Medicine Society Young Investigator Award, and the MIT Tech Review TR35 Top Young Innovator. Prof. Bettinger is also a co-inventor on several patents and was a finalist in the MIT $100K Entrepreneurship Competition. Prof. Bettinger received an S.B. in Chemical Engineering, an M.Eng. in Biomedical Engineering, and a Ph.D. in Materials Science and Engineering as a Charles Stark Draper Fellow, all from the Massachusetts Institute of Technology. He completed his post-doctoral fellowship at Stanford University in the Department of Chemical Engineering as an *NIH Ruth Kirschstein* Fellow.

Refreshments will be served.