



University at Buffalo

Department of Chemical
and Biological Engineering

School of Engineering and Applied Sciences

Seminar

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Distinguished Professor

Rutgers University

Polymer Nanotherapeutics: What's good for the heart is good for the brain!

Acute heart syndromes stem from the uncontrolled accumulation of oxidized low-density lipoproteins (LDL) within the walls of blood vessels, a process called *atherosclerosis*. We propose the concept of nanoscale polymeric biomaterials as therapeutics, which can inhibit cholesterol accumulation and the related inflammation that lead to atherosclerotic plaques. We have discovered that assemblies of such *nanolipoblockers (NLBs)* can systematically target the scavenger

receptor molecules that traffic highly oxidized LDL into inflammatory macrophages and improve the outcomes of atherosclerotic disease *in vivo*. This talk will highlight both the basic research and translational impacts. A parallel new research direction is the use of similar scavenger receptor-targeted nanoparticles as therapeutics against protein-aggregation in the brain, a major trigger for neurodegenerative diseases.



Refreshments at 10:45AM