

UNIVERSITY *of* DELAWARE
BIOMEDICAL ENGINEERING
SEMINAR

NOVEMBER 13, 2014

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ASSOCIATE PROFESSOR

BIOMEDICAL ENGINEERING

JOHNS HOPKINS SCHOOL OF MEDICINE

***"Polymeric Nanoparticles and
Microparticles to Bioengineer Target Cells"***

The Green lab uses libraries of biodegradable polymers to construct microparticles and nanoparticles as enabling technology that can bioengineer target cells and treat cancer. In one branch of this research, bionanotechnology is constructed that is safe and effective for the intracellular delivery of nucleic acids such as DNA and siRNA. These gene delivery nanoparticles are designed to be specific to cancer cells over healthy cells. Biomaterial structure, and in particular polymer end-group, can determine this cell-

type specificity. Examples will be shown for intracellular delivery to brain cancer, liver cancer, and lung cancer. A second branch of this research is on the design of micro and nanobiotechnology that mimics the surface presentation of biological cells. The role of particle size and shape in constructing artificial antigen presenting cells will be discussed. An example will be shown for how these biomimetic particles can be used for immunotherapy to treat melanoma.

11:00am in 322 ISE Lab. Refreshments served at 10:45am.