



DISTINGUISHED SEMINAR

ENGINEERING A LONG-LASTING PILL

ABSTRACT:

Prof Ambika Bajpayee in the Department of Bioengineering is working to develop a pill that unfolds to a structure in the stomach too large to pass to the small intestine. This way, the pill remains in the stomach for a month, slowly releasing medication in the face of mechanical and chemical digestive forces. In this event, Prof Bajpayee will present her work on this new type of pill. Then, Prof Bajpayee and Prof Markewich will show attendees how to create their own “pill” according to a set of design constraints. Attendees will observe how their design unfolds in a “stomach”.

BIO:

Dr. Helen Markewich is an Assistant Teaching Professor at Northeastern University in Boston, MA. Her specialty is lab-based and hands-on learning. She received her Ph.D. from Cornell University and her B.S. from Georgia Tech. She also worked in biotech and in the water industry.

Dr. Ambika Bajpayee works on drug delivery to connective and charged tissues such as cartilage, meniscus, intervertebral disc and mucosal membranes. Her lab utilizes concepts of nanomedicine and bio-electrostatics to design polypeptides and protein-based carriers for targeted and sustained delivery of small molecule drugs, protein growth factors, antibodies and genetic materials to specific intra-tissue and intra-cellular target sites inside connective tissues. A main focus

is on using charge interactions and other binding mechanisms to rationally design drug carriers that can penetrate through the dense matrix of avascular, negatively charged tissues. Her lab is also interested in understanding mechanisms leading to degenerative joint diseases (e.g., osteoarthritis) due to ageing and traumatic injuries. The group strives to combine basic science with translational research to develop biomedical technologies.

**WEDNESDAY FEBRUARY 20, 2020
12PM - 1PM**

**CURRY STUDENT CENTER,
ROOM 333**

**HOSTED BY
The Department of
Bioengineering**



Dr. Helen Markewich



Ambika Bajpayee