Ackert Hall, Room 120
Wednesday, November 15, 2017
4:00 P.M.

K-State
Biochemistry
Molecular
Biophysics
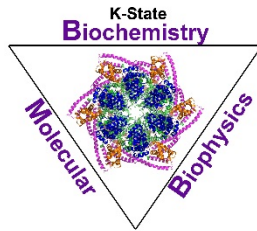
Coffee and Cookies
Chalmers Hall, Room 168
3:45 P.M.

Biochemistry & Molecular Biophysics

Seminar

Bio-inspired Micro/Nano-Manufacturing for Precision Therapeutics

Mei He, Ph.D.

Biological and Agricultural Engineering
Kansas State University

Understanding the complexity and high adaptability of human immunity allows us to take advantages of nature's insights for overcoming current challenges imposed on therapeutic manufacturing systems. Such immunity intelligence harnesses the structure, function, and information in one ecosystem for self-learned, adaptive problem solving. Inspired by the human immunity which manipulates immune cells and organs to produce therapeutic solutions, we are interested to develop an intelligent living tissue foundry for producing nano-sized extracellular vesicles. The extracellular vesicles have been well documented as the therapeutic biomaterials for modulating immune-responses, disease targeting, and drug delivery via transferring groups of biomolecules. However, the immune-modulation mechanism and associated engineering approaches are still lacking. This presentation introduces cutting-edge 3D microfluidic technology for studying living cell manufactured extracellular vesicles and exosomes, which will have an important implication on the cancer immunotherapy.