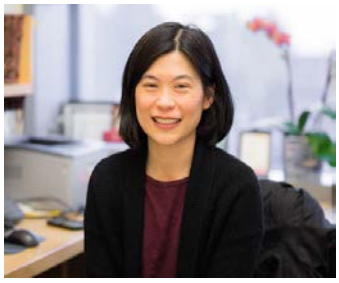
UCLA ENGINEERING
Chemical and Biomolecular Engineering

SEMINARS IN CHEMICAL AND BIOMOLECULAR ENGINEERING

Friday, April 13th, 2018 | 10:00AM **Boelter Hall 3400**



Presented by:

Suzie Hwang Pun

Professor
Department of Bioengineering
University of Washington

"Bioactive, Peptide-Containing Polymers for Biomedical Applications"

Peptides are versatile materials that can possess biological function and also be easily synthesized and incorporated into biomaterials. Polymers can enhance the biological action of peptides in multiple ways. In a first example, a multivalent polymer displaying a fibrin-binding peptide was synthesized by controlled radical polymerization. The resulting polymer incorporates into forming clots and increases clot strength while improving resistance to clot lysis. Delivery of this polymer to a rat model of trauma significantly improved survival compared to controls. We have also recently applied this polymer to investigate the role of fibrin in cancer metastasis. Fibrin stabilization alters the tumor microenvironment and affects disease outcome. These studies show that synthetic polymers can be used to as a complementary tool to transgenic animals and pharmacologic inhibitors in the study of disease. In a second example, we developed a polymer that selectively displays a membrane-disrupting peptide in acidic pH. This polymer promotes efficient endosomal release and was used to deliver a variety of macromolecular drugs.

Suzie H. Pun is the Robert F Rushmer Professor of Bioengineering, an Adjunct Professor of Chemical Engineering, and a member of the Molecular Engineering and Sciences Institute at UW. She is a fellow of the National Academy of Inventors (NAI) and American Institute of Medical and Biological Engineering (AIMBE), and has been recognized with the Presidential Early Career Award for Scientists and Engineers in 2006, the 2014 Young Investigator Award from the Controlled Release Society, and as an AAAS-Lemelson Invention Ambassador in 2015. She serves as an Associate Editor for ACS Biomaterials Science and Engineering. Her research focus area is in biomaterials and drug delivery. Suzie Pun received her B.S. in Chemical Engineering from Stanford University and her Ph.D. in Chemical Engineering from the California Institute of Technology. She also worked as a senior scientist at Insert Therapeutics/Calando Pharmaceuticals developing polymeric drug delivery systems before joining the Department of Bioengineering at University of Washington.