



Department of Biomedical Engineering
Graduate Seminar



Dr. Shang Song, Ph.D.

Post-doctoral fellow, Stanford University

Subject: Synthetic Materials for Artificial Organs and Regenerative Medicine

Abstract:

Imagine in a futuristic world where you can replace any body part with a bionic one, the scientific reality is closer than what many may assume after watching TV shows such as Westworld. Millions of people are in dire need of functional constructs that restore, maintain, or improve damaged tissues or whole organs. Dramatic advances in science and technologies have been made to mimic critical physiological features of a healthy body. Particularly, using engineered biomaterials to manipulate cell behavior offers us the ability to develop artificial organs and improve therapeutic treatments in the field of regenerative medicine. This presentation centers on how synthetic materials interact with various types of cells to achieve desired functionalities in the areas of diabetic, neural, and orthopedic research. Specifically, I will focus on (1) the development of silicon nanopore membrane (SNM)-based intravascular bioartificial pancreas device to treat Type 1 Diabetes (T1D); and (2) the use of electrical stimulation via conductive polymers to enhance nerve regeneration and neural recovery.

Bio:

Dr. Shang Song is currently a post-doctoral fellow at the Stanford University. She graduated with Ph.D in Bioengineering from University of California, Berkeley and San Francisco (UC Berkeley & UCSF). Her long-term research interests include using engineered biomaterials and cells to develop diagnostic devices and therapeutic treatment methods for translational and regenerative medicine. She was awarded scholarships and fellowships from organizations such as National Institute of Health Ruth L. Kirschstein Research Service Awards (NRSA) (F32), Stanford University Dean's Postdoctoral Fellowship, National Science Foundation Graduate Research Fellowship (NSF-GRFP), 30 under 30 in Healthcare by Forbes Magazine, Gates Millennium Scholar amongst others. In addition to her research interest, she has been leading translational initiatives and serving as a reviewer on peer-reviewed journals while holding multiple patents relating to cell encapsulation technologies. She received her Bachelor's degree in Biomedical Engineering with Honors from Brown University.

Date and time: Friday, December 11th, 2020 at 11:30 A.M.

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