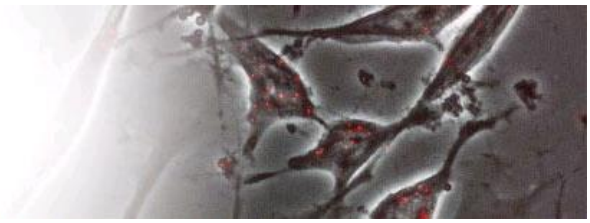
UCLA Engineering

Chemical and Biomolecular Engineering



SEMINARS IN CHEMICAL AND BIOMOLECULAR ENGINEERING

Friday, May 31, 2019
10:00am - 11:00am
Boelter Hall 3400

Samir Mitragotri

Professor
Bioengineering
Harvard University

"Understanding and Overcoming Biological Barriers for Drug Delivery"

Effective delivery of drugs is a major problem in today's healthcare. At a fundamental level, the challenge of drug delivery reflects the fact that the drug distribution in the body is limited by body's natural metabolic processes and transport barriers. These biological barriers, while serving an important purpose of regulating body's metabolic functions, limit the drug dose that ultimately reaches the target site. Accordingly, many drugs fail to reach their full therapeutic potential. Our research aims at developing a fundamental understanding of body's key biological barriers such as skin, intestinal epithelium and the immune system, and utilizing this understanding to develop novel means to negotiate these barriers to deliver drugs. Our research has led to the understanding of how transport properties of biological barriers can be modulated to deliver drugs in effective ways for the treatment of diseases such as diabetes and cancer, among others. I will present an overview of the lessons learned from our exploration of these biological barriers.

Samir Mitragotri is the Hiller Professor of Bioengineering and Wyss Professor of Biologically Inspired Engineering at Harvard University. He is a pioneer in the field of drug delivery. His research has provided new insights into biological barriers of skin and gastrointestinal tract, among others. His research has also led to new methods of transdermal, oral, and targeted drug delivery systems. He is an author of over 260 publications and is a Thomson Reuters Highly Cited Researcher. Prof Mitragotri is highly active in translating his inventions to clinical and commercial products. He is an inventor on over 170 patent/ patent applications. His inventions have led to several products that have been commercialized or are in advanced clinical development. He is an elected member of the National Academy of Engineering, National Academy of Medicine and National Academy of Inventors. He is a foreign member of Indian National Academy of Engineering. He is also an elected fellow of AAAS, CRS, BMES, AIMBE, and AAPS. He received BS in Chemical Engineering from the Institute of Chemical Technology, India and PhD in Chemical Engineering from the Massachusetts Institute of Technology. He is the Editor-in-Chief of AIChE's and SBE's new journal Bioengineering and Translational Medicine.