

“Biomaterials-Mediated Inflammation Control”

Wednesday
April 22, 2020
3:00 pm

Wu and Chen Auditorium
Levine Hall



Kam W. Leong
Samuel Y. Sheng Professor
Biomedical Engineering
Columbia University

Abstract

Many chronic disabling diseases such as rheumatoid arthritis, psoriasis, multiple sclerosis and systemic lupus erythematosus are increasingly linked to inappropriate and chronic activation of inflammatory cells. A central event in the pathogenesis of these diseases appears to be an aberrant activation of innate immune sensors, most prominently the Pattern Recognition Receptors (PRRs), by nucleic acids that are released from dead and dying cells. Moreover, such extracellular nucleic acids have also been implicated in inflammatory diseases such as heart attack, traumatic injury, and stroke in activating the contact pathway of coagulation. In this presentation, I will discuss the application of nucleic acid-binding polymers in the configuration of either soluble or immobilized polycation to scavenge these pathogenic nucleic acids as a molecular strategy to combat inflammation.

Bio

Kam W. Leong is the Samuel Y. Sheng Professor of Biomedical Engineering at Columbia University. He received his Ph.D. in Chemical Engineering from the University of Pennsylvania. After serving as a faculty in the Department of Biomedical Engineering at The Johns Hopkins School of Medicine for almost 20 years, he moved to Duke University in 2006 to focus on the design of nanostructures for therapeutic applications. After moving to Columbia University in September 2014, he continues to work on nanoparticle-mediated, non-viral gene delivery and gene editing. He has published ~400 peer-reviewed papers and holds more than 60 issued patents. His work has been recognized by a Young Investigator Research Achievement Award of the Controlled Release Society, Distinguished Scientist Award of the International Journal of Nanomedicine, Clemson Award for Applied Research of the Society for Biomaterials, and Lifetime Achievement Award of CASNN. He is the Editor-in-Chief of *Biomaterials*, a member of Academia Sinica, the International Institute of Medical and Biological Engineering, the USA National Academy of Inventors, and the USA National Academy of Engineering.

Spring 2020 CBE Seminar Series

