



## **Dr. Ke Cheng**

Professor,  
Department of Biomedical  
Engineering  
Columbia University

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**Sept 08**(Fri)

11:30am - 12:30pm

**CKB 217**

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## ***Cellular and Biomaterial Drug Delivery for Heart and Lung Repair***

### *Abstract:*

Therapeutic tissue regeneration using stem cells has been hampered by the controversial identity of resident stem cells, low cell retention/engraftment, tumorigenicity and immunogenicity issues. Taking a bioengineering/biomaterials approach, this lecture will introduce the uses of drug delivery and biomaterials strategies to generate more potent cell therapies for heart and lung diseases. In addition, a pharmacoengineering approach is taken to refine cell therapies by developing acellular therapeutics such as stem cell-derived secretome and exosomes in the setting of heart and lung regeneration. This lecture will also mention a couple of stories in translating bench research into IND-enabled clinical trials on cell-based therapies.

### ***About the Speaker***

Dr. Ke Cheng is a Professor of Biomedical Engineering at Columbia University. He is a fellow of the International Association of Medical and Biological Engineering (IAMBE), the American Institute of Medical and Biological Engineering (AIMBE), and the American Heart Association (AHA). He currently serves as the Chair of the NIH Biomaterials and Biointerfaces (BMBI) Study Section. He also serves as the Editor-in-Chief for Extracellular Vesicle (Elsevier) and Associate Editor for Bioactive Materials. Dr. Ke Cheng has been devoted to the clinical application of stem cells and exosomes. He led several Investigational New Drug (IND) applications obtained from the FDA. The biotech companies he founded are developing stem-cell drugs and extracellular vesicles to provide better solutions for heart and lung regeneration, cancer therapy, and drug delivery.