Northeastern University
College of Engineering

Northeastern University
College of Engineering

February 4, 2026 | 300 Richards Hall | 12:00PM

Distinguished Seminar Speaker

Engineering Vaccines, Cell and Gene Therapies Using Synthetic Biology

Prof. Wilson Wong

Prof. of Biomedical University | Boston University | Boston, MA

Abstract: In this seminar, I will share with you some of the work that my trainees and colleagues have done on using synthetic biology in various areas, such as foundational circuit engineering, cellular immunotherapy, and vaccines. I will discuss our work on improving the specificity and safety of CART cell therapy against cancer using synthetic biology and biomaterials. I will also share our recent discovery on engineering self-amplifying RNA with reduced innate immune response and improved protein expression, leading to a highly potent COVID-19 vaccine as demonstrated in a lethal live virus challenge in mice.

Biography: Dr. Wilson Wong is a Professor of Biomedical Engineering and an Allen Distinguished Investigator at Boston University. He is an expert in immune cell engineering and synthetic biology for therapeutic applications. Dr. Wong's research has been published in numerous high-impact journals, including Nature, Nature Biotechnology, Cell, and PNAS. Dr. Wong has been recognized with multiple academic career awards, including membership in the AIMBE, NIH New Innovator Award, the ACS Synthetic Biology Young Investigator Award, the NSF CAREER Award, and the Allen Distinguished Investigator Award. He has co-founded three companies, with one in the clinical stage. Dr. Wong has a BS in Chemical Engineering from the University of California, Berkeley, and a PhD in Chemical and Biomolecular Engineering from the University of California, Los Angeles. Dr. Wong completed his postdoctoral studies in the laboratory of Professor Wendell Lim at the University of California, San Francisco.

Department of Chemical Engineering
201Cullinane Hall
Northeastern University
360 Huntington Avenue
Boston, MA 02115