



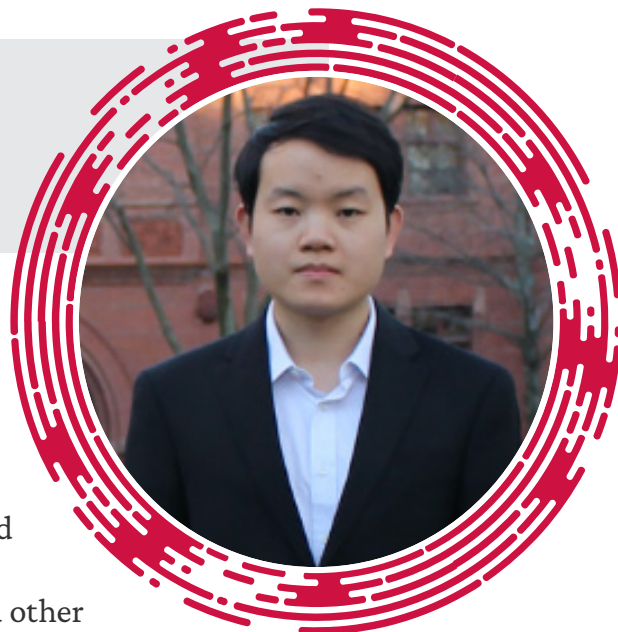
# Molecular to Systemic Engineering of Immune Cells for Robust Immunotherapy

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Immunotherapy has achieved significant clinical progress for the treatment of cancer and other diseases over the past decade, but challenges, including low patient responses, off-target side effects, and poor efficacy against solid tumors and autoimmune disorders, remain. One of our research interests is to understand how immune cells (e.g., dendritic cells (DCs)) can be manipulated or engineered using chemistry, material, and chemical biology approaches, in order to develop effective therapies for cancer and other diseases. In this talk, I will present our recent efforts in molecular, systemic, and in situ engineering of DCs and further development of robust cancer vaccines. These include molecules and polymers that can interact with DC membrane and thus activate DCs, and macroporous materials that can actively recruit and program DCs in situ. I will then conclude my talk with several short stories along the line of metabolic glycan labeling, another key technology in my lab, regarding how we made it possible to precisely modulate cells that are historically challenging to engineer.



## ABOUT the SPEAKER

Prof. Hua Wang is an Associate Professor in the Department of Materials Science and Engineering at UIUC. He is also affiliated with the Cancer Center at Illinois, Department of Bioengineering, Carle College of Medicine, Beckman Institute, Materials Research Laboratory, and Institute for Genomic Biology. Prof. Wang received his B.S. degree in Polymer Science and Engineering from the University of Science & Technology of China in 2012, completed his PhD in Materials Science and Engineering at UIUC in 2016, and pursued his postdoc in cancer immunotherapy and immunoengineering at Harvard University during 2016-2020. Wang lab is conducting interdisciplinary research in the fields of cancer immunotherapy, metabolic glycan labeling, immunoengineering, cell engineering, and biomaterials. Prof. Wang is a recipient of NSF CAREER Award (2021), NCI R01 grant (2022), Scialog Fellow (2023), CMBE Young Innovator Award (2023), Sontag Distinguished Scientist Award (2024), American Cancer Society Research Scholar Award (2024), DoD CDMRP Idea Development Award (2024), and Dean's Award for Excellence in Research (2024), and attendee of the 2023 Grainger Foundation Frontiers of Engineering Symposium organized by NAE.

**Monday, September 29 at Noon**  
**1003 Engineering Centers (Tong Auditorium)**

