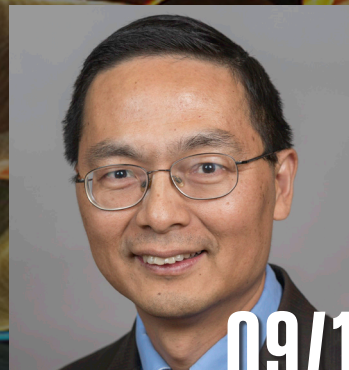


# SEMINAR SERIES 2021

10:00 - 11:00 AM | COLBURN LAB | ROOM 102



09/17

## SYNTHETIC BIOLOGY: PUTTING SYNTHESIS INTO BIOLOGY

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### ABSTRACT

Synthetic biology is the design of novel or improved biological systems using engineering principles. It is a rapidly growing area with broad applications in medical, chemical, food, and agricultural industries. In this talk, I will highlight our recent work in the development and application of novel foundational synthetic biology tools. Specifically, I will introduce four interrelated stories, including: (1) development of the Illinois Biological Foundry for Advanced Biomanufacturing (iBioFAB) for next-generation synthetic biology applications; (2) development of new strategies and tools for discovery of novel natural products from genomes and metagenomes; (3) development of genome-scale engineering tools for rapid metabolic engineering applications; and (4) development of new genome engineering tools for human gene therapy and fundamental studies of cell biology.

### BIOGRAPHY

Dr. Huimin Zhao is the Steven L. Miller Chair of chemical and biomolecular engineering at the University of Illinois at Urbana-Champaign (UIUC) and director of NSF AI Institute for Molecule Synthesis ([moleculemaker.org](http://moleculemaker.org)). He received his B.S. degree in Biology from the University of Science and Technology of China in 1992 and his Ph.D. degree in Chemistry from the California Institute of Technology in 1998 under the guidance of Nobel Laureate Dr. Frances Arnold. Prior to joining UIUC in 2000, he was a project leader at the Industrial Biotechnology Laboratory of the Dow Chemical Company. He was promoted to full professor in 2008. Dr. Zhao has authored and co-authored over 360 research articles and over 25 issued and pending patent applications with several being licensed by industry. In addition, he has given over 410 plenary, keynote, or invited lectures. Thirty-one (31) of his former graduate students and postdocs became professors or principal investigators in the United States (9), China (Mainland 16, Taiwan 1), Korea (2), Singapore (2), and Egypt (1). He received many research and teaching awards and honors such as ECI Enzyme Engineering Award (2019), and Marvin Johnson Award (2018), and Charles Thom Award (2016). His primary research interests are in the development and applications of synthetic biology, machine learning, and laboratory automation tools to address society's most daunting challenges in health, energy, and sustainability.