

EECE Department Seminar

Friday, September 22, 2017

11:00am

Brauer Hall, Room 12

Systems and synthetic biology: constructing programmable cells

ABSTRACT

The past decade has witnessed the tremendous power of systems and synthetic biology in the creation of genetic parts, devices, and systems, which helps understand complex biological systems. However, its potential for real-world applications has not been fully exploited. One of its promising applications is the construction of programmable cells that are able to integrate multiple environmental signals and to implement synthetic control over biological processes. My research interests are focused on developing microbes that are able to process multiple input signals and

to generate user-defined outputs. Specifically, I aim to build genetic programs in order to control various bacterial processes such as gene expression, chemical reactions, and evolution. I will present examples of my research projects to discuss the potential and challenges of systems and synthetic biology for practical applications.

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Professor Moon became a professor in the Department of Energy, Environmental & Chemical Engineering at Washington University in St. Louis in 2012.

Professor Moon completed his postdoctoral fellowship in the Voigt Group, in the Department of Biological Engineering & SynBio Center at Massachusetts Institute of Technology and jointly, in the Department of Pharmaceutical Chemistry at University of California-San Francisco.