

# CHEMICAL ENGINEERING

## SEMINAR SERIES



### STACEY FINLEY

**Monday, February 05, 2018**

Gordon S. Marshall Early Career Chair and Assistant Professor of Biomedical Engineering and Chemical Engineering and Materials Science

University of Southern California

## Chemical kinetic modeling of biological networks in cancer

**ABSTRACT:** Systems biology approaches, including computational models, provide a framework to test biological hypotheses and optimize effective therapeutic strategies to treat human diseases. My research group works to quantitatively understand the dynamics of key signaling and metabolic networks in cancer. I will present our latest work in applying systems biology in three areas: 1) Tumor angiogenesis signaling: a computational model to predict the effects of crosstalk amongst key proteins involved in regulating angiogenesis, the formation of new blood vessels; 2) Immune cell signaling: a predictive model to quantitatively describe the biochemical reactions that regulate chimeric antigen receptor (CAR) mediated T cell activation required for immunotherapeutic strategies; and 3) Cancer metabolism: a dynamic model of metabolism pathways in pancreatic cancer cells. The long-term mission of my laboratory is to translate our understanding of these networks and their dynamics into effective therapeutic strategies.

**RECEPTION 3:30 • LECTURE 4:00 - 5:00**  
**PHYSICS ASTRONOMY BLDG. PAA A 114**



**CHEMICAL ENGINEERING**  
UNIVERSITY of WASHINGTON

*Knowledge and solutions for a changing world*

**BIOGRAPHY:** Stacey D. Finley is the Gordon S. Marshall Early Career Chair and Assistant Professor of Biomedical Engineering at the University of Southern California. Dr. Finley joined the faculty at USC in 2013, and she leads the Computational Systems Biology Laboratory. Dr. Finley has a joint appointment in the Department of Chemical Engineering and Materials Science and is a member of the USC Norris Comprehensive Cancer Center. Dr. Finley received her B.S. in Chemical Engineering from Florida A & M University and obtained her Ph.D. in Chemical Engineering from Northwestern University. She completed postdoctoral training at Johns Hopkins University in the Department of Biomedical Engineering.