

**“PhysioMimetics: How
Integration of Systems Biology
with Organs-on-Chips May
Humanize Therapeutic
Development”**

**Wednesday
October 25, 2017
3:00 pm
Wu & Chen Auditorium
Levine Hall**



**Linda G. Griffith
S.E.T.I. Professor of
Biological and Mechanical Engineering
Massachusetts Institute of Technology**

Reception to Follow

Abstract

“Mice are not little people” is a refrain that is becoming louder as the strengths and weaknesses of animal models of human disease become more apparent. At the same time, three emerging approaches are headed toward integration: systems biology analysis of cell-to-cell and intracellular signaling networks in patient-derived samples; 3D tissue-engineered models of human organ systems, often made from stem cells; and micro and mesofluidic devices that enable 3D “microphysiological systems (MPSs)” to be sustained, interconnected, perturbed and analyzed for weeks in culture. This talk will describe the recent work of Dr. Griffith and her group in integrating these approaches to study chronic inflammatory diseases, with an emphasis on building and characterizing 3D mucosal barrier models of endometrium and gut, and the deployment of these models to analyze inflammation and multi-MPS cross talk.

Bio

Linda G. Griffith, Ph.D. (UC Berkeley, Chemical Engineering), is the School of Engineering Teaching Innovation Professor of Biological and Mechanical Engineering and MacVicar Teaching Fellow at MIT, where she directs the Center for Gynepathology Research and the Human Physiome on a Chip Project. She led development of MIT’s undergraduate major in Biological Engineering, which launched in 2005 as MIT’s first new major in almost 40 years. Several technologies from her lab have been commercialized, including the 3D Printing process for tissue engineering, and the Liverchip. She is a member of the National Academy of Engineering and her awards include a MacArthur Foundation Fellowship and the *Popular Science* Brilliant 10 Award. She has served as a member of two NIH Advisory Councils (NIDCR and NIAMS) and currently serves on the Advisory Committee to the Director of the NIH.

Britton Chance Distinguished Lecture

