



**The Department of  
Mechanical Engineering**

PRESENTS

**Eva Kanso, PhD**

Professor

Z.H. Kaprielian Fellow in Aerospace and Mechanical  
Engineering at the University of Southern California.



**Friday, October 27th, 2017  
WCH Room 205/206  
11:10-12:00PM**

***Abstract:***

Motile cilia are micron-scale hair-like protrusions from epithelial cells that beat collectively to transport fluid. On the tissue level, cilia serve diverse biological functions, such as mucociliary clearance in the airways and cerebrospinal fluid transport in the brain ventricles. Here, I will present a series of models of increasing level of complexity that examine: (1) the emergence of self-sustained oscillations in a single cilium, (2) the coordination in the beating motion of neighboring cilia, and (3) the role of ciliated tissues in particle capture and filtering. I will conclude by commenting on the implications of these results for understanding the biophysical mechanisms in cilia-bacteria associations.

***About the Speaker:***

Eva Kanso is a professor and the Z.H. Kaprielian Fellow in Aerospace and Mechanical Engineering at the University of Southern California. Prior to joining USC, Kanso held a two-year postdoctoral position in Computing and Mathematical Sciences at Caltech. She received her Ph.D. and M.S. in Mechanical Engineering as well as her M.A. in Mathematics from UC Berkeley. Kanso is the recipient of an NSF early CAREER development award in 2007, a Junior Distinguished Alumnus award from the American University of Beirut in 2014 and a USC Graduate Student Mentoring Award in 2016.