

APT-CCF Distinguished Lecture Series

Friday May 21st, 2021 (Virtual): 11a-12p EST

“Polymer-based Microfabricated Implants”

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Abstract:

The Biomedical Microsystems Laboratory at the University of Southern California focuses on developing novel translational microtechnologies and microdevices for biomedical applications, in particular medical implants. Often the last line of defense for combating a wide range of challenging medical conditions, implants help extend and improve the quality of life for many. This industry continues to be fueled by the growing number of elderly and increased prevalence of chronic diseases. The application of microelectromechanical systems technology and medical polymer micromachining will enable the next generation of advanced medical implants that are needed to address urgent unmet clinical needs. This talk will present an overview of current research topics in the laboratory starting with invasive polymer interfaces to nervous tissue and then transition to electrochemical sensor systems for treating hydrocephalus.

Bio:

Ellis Meng is the Shelly and Ofer Nemirovsky Chair of Convergent Biosciences and Professor of Biomedical Engineering and Electrical and Computer Engineering in the Viterbi School of Engineering at the University of Southern California where she has been since 2004. She is also the Vice Dean of Technology Innovation and Entrepreneurship. She was previously Dwight C. and Hildagarde E. Baum Chair of the Department of Biomedical Engineering from 2015-2018 and an inaugural holder of a Gabilan Distinguished Professorship in Science and Engineering from 2016-2019. She received the B.S. degree in engineering and applied science and the M.S. and Ph.D. degrees in electrical engineering from the California Institute of Technology in 1997, 1998, and 2003, respectively. Her research interests include biomedical microelectromechanical systems (bioMEMS), implantable biomedical microdevices, microfluidics, integrated microsystems, microsensors and actuators, biocompatible polymer microfabrication, and packaging. Her honors include the NSF CAREER award, Wallace H. Coulter Foundation Early Career Award, 2009 TR35 Young Innovator Under 35, Viterbi Early Career Chair, ASEE Curtis W. McGraw Research Award, 2018 IEEE Engineering in Medicine and Biology Society Technical Achievement Award, and 2019 IEEE Sensors Council Technical Achievement Award. She is a fellow of NAI, IEEE, ASME, BMES, and AIMBE. She serves as the North American representative on the IEEE Engineering in Medicine and Biology Society AdCom. She is on the editorial board of the Journal of Microelectromechanical Systems, Journal of Micromechanics and Microengineering and Frontiers in Mechanical Engineering, Micro- and Nano-mechanical Systems. She was co-chair of the 2017 IEEE MEMS conference. She is also an inventor, co-founder of two companies based on her research, and author of a textbook on bioMEMS.