

BIOENGINEERING

PRESENTS

"Engineering New Blood and Lymphatic Vascular Networks"



THURSDAY, October 28th, 2021

12:00 – 1:00 PM

Zoom Link: <https://ucla.zoom.us/j/96241974712>

Eduardo A. Silva, Ph.D.

Associate Professor and Vice-Chair,
Department of Biomedical Engineering
(BME)

University of California, Davis

ABSTRACT:

Ischemic vascular diseases remain the leading cause of mortality in older adults. To date, current medical strategies to address such conditions are prevention-based or surgically invasive. Therapeutic angiogenesis, however, can treat ischemic diseases by promoting the growth of new blood vessels from the pre-existing vasculature. We have successfully driven neovascularization in various ischemic murine models by developing alginate-based strategies to deliver proteins and/or cells. Yet, translating the success of pre-clinical studies into patient improvement has been quite challenging as the results of the clinical trials have been modest. Why has there been such poor correlation between animal studies and clinical trials to date? There are multiple potential reasons involving both engineering and biological aspects. I expect to discuss some of these challenges during this talk and describe how biomaterial systems could address and bypass some of these challenges.

BIOGRAPHY:

Dr. Silva is an Associate Professor at the University of California, Davis, and Vice-Chair of the Department of Biomedical Engineering (BME). He received his degree in Metallurgical and Materials Science Engineering from the University of Porto, Portugal. The same year that Dr. Silva finished his engineering degree, he was awarded a scholarship through the Gulbenkian Foundation to do his Ph.D. in Biomedicine (Gulbenkian Ph.D. Programme in Biomedicine (PGDB)), Dr. Silva was the first engineer to be awarded this scholarship. He received his Ph.D. in Engineering Sciences: Bioengineering in 2008 while working under Prof. David Mooney's (Harvard University) supervision. After completing his Ph.D., Eduardo was awarded a Wyss Technology Development fellowship (Harvard Fellow). The Wyss Institute for Biologically Inspired Engineering (Harvard University) selected fellows based on their academic achievements and their technology development potential in Biologically Inspired Engineering. In Nov. 2011, Eduardo joined the University of California, Davis. Eduardo received several honors and awards, including the Metallurgical and Materials Science Engineering best student from the U. Porto, Hellman Family Fellow, invited participant on both the Frontiers of Engineering Education and Frontiers of

Engineering Symposium by the American National Academy of Engineering (NAE), Biomaterials Science Journal - Emerging Investigator award. He has 8 patents or patent applications, and Novartis recently licensed one of his patents. Overall, his long-term research goal is to engineer novel polymer-based vehicles for the controlled delivery of cells, drugs, and/or genes in the context of vascularizing ischemic tissues.

Website: <https://bme.ucdavis.edu/silva/>

Twitter: <https://twitter.com/silvalabUCDavis>