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Tissue engineering and regenerative medicine in the age of multi-drug resistant bacteria

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In this presentation, the author will discuss approaches in her lab to elucidate and optimize biomimetic smart materials for tissue engineering and regenerative medicine applications using human adipose derived stem cells (hASC). Human ASC are a particularly promising cell source for functional tissue engineering applications due to their multi-lineage differentiation potential and their abundance and ease of harvest relative to many other cell types. Focus will be placed on regeneration of skin and musculoskeletal tissues; and, approaches to wound care and tissue regeneration while combating multi-drug resistant bacteria, in particular methicillin resistant *Staphylococcus aureus* (MRSA).

Biography

Elizabeth G Lobo is the Dean and Professor of Bioengineering in the College of Engineering, the University of Missouri, Columbia. She has received her BS degree in Mechanical Engineering from the University of California, Davis and her MS and PhD in Biomechanical Engineering and Mechanical Engineering, respectively, from Stanford University. Although she serves as Dean, she continues to maintain an active research portfolio with work in her laboratory focused on: 1) biomimetic mechanical, electrical and material stimuli to human stem cells for functional tissue engineering applications; and, 2) textile-based and nanofibrous "smart bandages" as controlled release systems for wound healing, tissue engineering, and regenerative medicine applications requiring antimicrobial, antibacterial, and/or anti-inflammatory treatment(s). She has published over 275 peer-reviewed conference proceedings, book chapters and journal articles. Her research has been funded by the Nonwovens Institute, North Carolina Biotechnology Center, Dow, BioGate, National Science Foundation and the National Institutes of Health. She is a recipient of the Ralph E Powe Junior Faculty Award, Sigma Xi Faculty Research Award, NCSU Chancellor's Innovation Award, NCSU Faculty Scholar Award, UK-US Stem Cell Collaboration Development Award, UC Davis Distinguished Engineering Alumni Award and the Stanford University Distinguished Alumni Scholar Award. She is a Fellow of both the Biomedical Engineering Society and the American Institute for Medical and Biological Engineering.

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