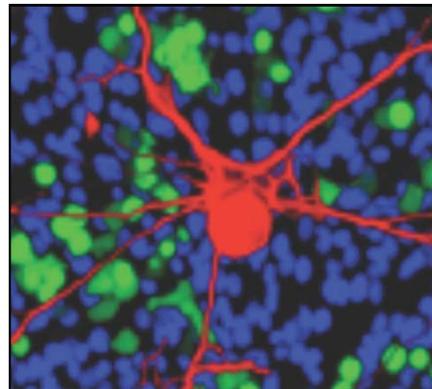




Co-sponsored with Department of Biological Systems Engineering

Professor Lonnie D. Shea
Chair, Department of Biomedical Engineering
University of Michigan
*Engineered bridges to promote regeneration following
spinal cord injury*



Systems and strategies for promoting tissue growth provide enabling technologies for either enhancing regeneration for diseased or injured tissues. Given the complexity inherent in tissues, my laboratory is working towards the concept of "Systems Tissue Engineering", which indicates, in part, the need to develop systems capable of presenting combinations of factors that drive tissue growth.

Biomaterial scaffolds represent a central component of many approaches and provide the enabling tools for creating an environment and/or deliver factors that can direct cellular processes toward tissue formation. My laboratory has used gene delivery has a versatile tool to provide cues that complement those provided by the structural material. We have developed scaffolds with the objective of providing factors to stimulate growth and also blocking factors that inhibit regeneration, and will illustrate this approach through our work in the area of spinal cord injury. The presentation will describe our efforts to modulate inflammation, support cell survival and the regeneration of axons through the injury, and recruit progenitor cells to myelinate the regenerating axons.



Prof. Shea received his BS and MS degrees at Case Western Reserve University in Chemical Engineering and his PhD in Chemical Engineering and Scientific Computing at the University of Michigan. He joined the faculty of Northwestern University in 1999 and the University of Michigan in 2014 bringing his active research group working at the interface of tissue engineering, gene therapy, and drug delivery. More recently, his research has moved into cancer diagnostics, autoimmune disease, and systems biology applied to regenerative medicine.

Host:
Prof. Angela Pannier
Department of
Biological Systems Eng.

Please Post

Tuesday, February 17, 3:30 pm
116 Chase Hall, East Campus