

WHITAKER BIOMEDICAL ENGINEERING INSTITUTE

DEPARTMENT OF BIOMEDICAL ENGINEERING FRIDAY SEMINAR SERIES

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University of California, Irvine

“Multicompartment Microfluidic Devices for Neuroscience Research”

DATE: April 21, 2006
TIME: 1:00 p.m. – 2:00 p.m.
PLACE: **Traylor 709**
Videoconferenced to Clark 110
Host: Dr. Nitish Thakor

Abstract:

Over the past decade, microfluidics research has progressed from a specialized field to a multi-disciplinary endeavor with applications in genomic and biochemical analysis and cell biology. Microfluidic systems offer several advantages over macroscopic systems due to its ability to control precise microenvironment in space and time when applied to cell biology problems. Our group has focused on developing new microfluidic devices for neuroscience applications. This presentation will describe the development of a microfluidic neuronal culture platform that combines microfabrication and surface micropatterning approaches to create a multi-compartment device for spinal cord injury and other neuroscience research. A microfluidics-compatible surface micropatterning approach to facilitate identification and visualization of neurons will also be described. The ability to direct sites of neuronal attachment and orientation of axon outgrowth by micropatterning techniques, combined with fluidically isolated compartments within the culture area offer significant advantages over conventional methods for manipulating distinct cellular microenvironments.

Any questions, contact 410-955-3132.

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