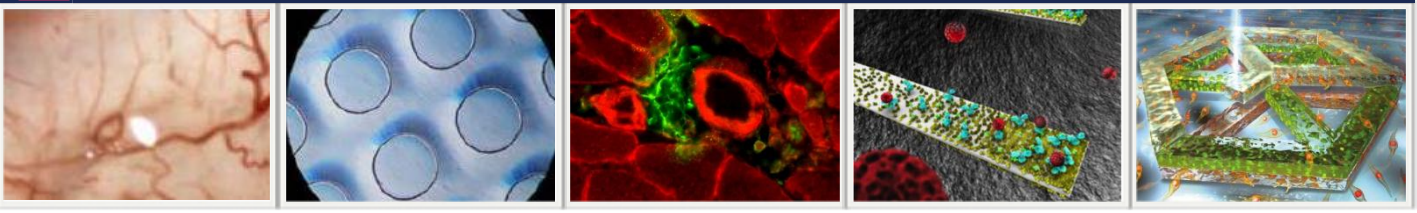
BioNanotechnology Seminar Series

Spring 2011



Shrink Induced Nanostructures and Microsystems for Biomedical Applications

Dr. Michelle Khine

Department of Biomedical Engineering
University of California, Irvine

Date: Tuesday, May 10, 2011
Time: 12:00 – 1:00 p.m. CDT
Location: 1000 MNTL

Abstract:

The challenge of micro- and nano-fabrication lies in the difficulties and costs associated with patterning at such high resolution. Instead of relying on traditional fabrication techniques -- largely inherited from the semiconductor industry -- for microfluidic applications, we have developed a radically different approach. We pattern at the large scale, which is easy and inexpensive, and rely on the heat-induced relaxation of pre-stressed polymer sheets to achieve our desired structures. Using this approach, we have demonstrated that we can create fully functional and complete microfluidic devices with integrated nanostructures within minutes. These devices can be created for only pennies per chip and without any dedicated costly equipment. This enables researchers to make custom micro- and nano-tools for a range of needs, from basic biological studies to tissue engineering applications to point of care diagnostics for the detection of infectious diseases.

Seminar Presented by:

Center for Cellular Mechanics
University of Illinois at Urbana-Champaign

IGERT Integrative Graduate Education and Research Traineeship
Cellular and Molecular Mechanics and BioNanotechnology

M-CNTC NCI Alliance for Nanotechnology in Cancer
Midwest Cancer Nanotechnology Training Center

CNST University of Illinois Center for Nanoscale Science and Technology