

The Development of an Optically Controlled Skeletal Muscle Biological Actuator Using Stereolithography

Caroline Cvetkovic, CMMB IGERT Trainee

Caroline is a PhD student in the Department of Bioengineering at the University of Illinois at Urbana-Champaign

Date: Tuesday, April 9, 2013

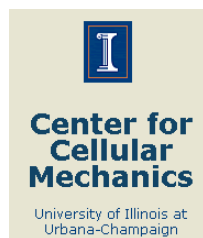
Time: 12:00 – 12:30 p.m. Central (10:00 – 10:30 a.m. Pacific)

Location: 1000 MNTL at Illinois (KL 361 at UC Merced)

Abstract:

We have used a 3D printing technology (stereolithography, or SLA) to create a hydrogel structure capable of actuation when combined with skeletal muscle cells and fibrous ECM proteins. The energy of polymerization from the SLA can be altered to achieve structures with different stiffness values and hence different bending and actuation. The 'bio-bot' biological actuator is capable of achieving net motion through asymmetry and can also be controlled using optogenetic-based methods.

Seminar Presented by:



CNST University of Illinois Center for Nanoscale Science and Technology