

Understanding and Controlling Fibrotic Myocardium

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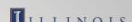

Time: 12:00 – 1:00 p.m. CST (10:00 – 11:00 a.m. PST)

Location: 1000 MNTL at Illinois (SSM 150 at UC Merced)

Abstract:

Hypertension kills 1 in every 5000 Americans each year and affects the majority of those over the age of 55. Following prolonged hypertension, cardiac fibroblasts within the heart convert to myofibroblasts, a larger, contractile phenotype that produces fibrous connective tissue and thereby stiffens heart muscle. In addition to this mechanical effect, myofibroblasts disrupt normal patterns of electrical excitation of cardiomyocytes, potentially leading to cardiac failure through any of several pathways. Therapies that control myofibroblasts would evidently be of value, but little is known about their mechanical and electrophysiological interactions with cardiomyocytes. We therefore developed and analyzed a model tissue system that allows us to dissect how myofibroblasts, cardiomyocytes, and ECM interface to alter the functioning of myocardium. This talk will summarize results suggesting pathways by which myofibroblasts alter the contractile response of myocardium, and some initial thoughts on treatments to improve this response by regulating cytoskeletal elements of myofibroblasts.

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