SPEAKER: Dr. Jonathan W. Song
Department of Radiation Oncology
Massachusetts General Hospital & Harvard Medical School
Boston, Massachusetts

TOPIC: BIOMECHANICAL REGULATION OF BLOOD VESSEL FORMATION: INSIGHTS USING MICROSCALE TECHNOLOGY

DATE: Thursday, February 28, 2013
TIME: 3:30 p.m.
PLACE: Lower Level Auditorium, Geddes Hall
RECEPTION: 3:00 – 3:30 p.m. – Coffee House, Geddes Hall

ABSTRACT

Blood vessels support tissue growth in development, physiology, and disease. Our understanding of how new blood vessels form is incomplete due in large part to the lack of appropriate systems for studying vessel guidance cues under well-controlled yet physiologically relevant conditions. Microscale technology has emerged as a means of delivering mechanical and biochemical stimuli to cellular microenvironments at unprecedented levels of precision. Here I will present my work in leveraging this technology to investigate the role of fluid mechanical forces, such as intravascular shear stress and transvascular flow, in guiding new vessel formation. More specifically, I will discuss new insights on how endothelial cells sense fluid forces during sprouting, morphogenesis, and lumenized network formation in vitro. Furthermore, this presentation will highlight the versatility of microscale technology as it pertains to vascular physiology to enable further exploration of the key physical, cellular, and molecular determinants that coordinate vessel growth.

NOTE: If you are interested in meeting individually with Dr. Song, please contact Linda at 631-5431