

Department of Biomedical Engineering
Johns Hopkins University
School of Medicine and the Whiting School of Engineering

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Monday, September 21, 2009 at 1:30

School of Medicine, Talbot Library,
Traylor 709

Video-Teleconferenced to the Rome
Room, Clark 110

Light lunch will be provided in Traylor 709



Systems Biology of Angiogenesis

Systems biology approaches to angiogenesis will be presented that include molecular-level computational models of hypoxia-inducible factor (HIF), vascular endothelial growth factors (VEGF), and matrix metalloproteinases (MMPs), as well as an agent-based model of capillary sprouting and neovascular network formation. The model of VEGF is extended from molecular to whole body level and is applied to investigate therapeutic pro-angiogenic interventions in peripheral arterial disease and anti-angiogenic interventions in cancer. Bioinformatic approaches to angiogenesis will also be discussed that include protein-protein interaction networks and proteome-wide search for novel anti-angiogenic peptides; the candidates are screened and validated in vitro in endothelial cell proliferation and migration assays and then in vivo using mouse models of cancer and ocular diseases.

Upcoming Seminar:
October 5: Jeff Siewerdsen, Johns Hopkins University

<http://www.hopkinsmedicine.org/ibbs/news/events.html>
<http://www.hopkinsmedicine.org/scical>

For more information call 410-955-3132
<http://www.bme.jhu.edu>