joint CANCER & BIOENGINEERING SEMINAR

“The Lymphatic System in Disease Processes and Cancer Progression”

Thursday – April 28, 2016 – 4:15 p.m.
EPFL – room SV1717.1

Prof. Timothy P. Padera
Massachusetts General Hospital, Harvard Medical School, Boston, MA (USA)

host: Prof. Melody Swartz

Abstract

My laboratory uses novel intravital microscopy tools to examine how the lymphatic system can drive the progression of cancer both through metastatic spread and impairment in anti-tumor immune function. In addition, we study the molecular control of lymphatic pumping and how pumping becomes dysfunctional in variety of disease settings including inflammation, lymphedema and bacterial infection. Using our recently developed methods to longitudinally image lymph nodes in vivo, we will discuss our results showing that lymph node metastasis do not require the formation of new blood vessels in order to grow. Additionally, using our recently developed optical method to measure lymph flow without requiring injected contrast, we will discuss the relationship between lymphatic pumping, lymph flow and intraluminal valve opening in collecting lymphatic vessels under normal and pathological conditions. By understanding the molecular control of these processes, the first drugs targeting lymphatic function can be developed to help in the treatment of multiple diseases.

See current Bioengineering seminar calendar at http://bioengineering.epfl.ch/seminars