The Centre for Blood Research Seminar Series

Wednesday, September 11th, 2013
LSC 3 - Life Sciences Centre
2350 Health Sciences Mall
12-1pm

Dr. Karen C. Cheung

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UBC

"Microfluidic systems for three-dimensional cell culture and microenvironment"

This presentation will cover some of the ongoing projects in the Biomedical Microdevices (BioMEMS) Lab at UBC. One major focus of research is the development of microfluidic systems for three-dimensional cell culture and drug screening. This research will help us understand how cancer spreads and could provide a new method for determining the most effective drug treatment for individual patients by collecting biopsies. We culture small numbers of cancer cells and monitor the effect of drugs and drug combinations, as well as changes in the cell environment, on those cells. This work involves cell entrapment and three dimensional cell culture in hydrogels formed in situ within microfluidic devices. We are creating physiological drug profiles to better model the tumor environment, and we are integrating oxygen sensors to monitor the effects of hypoxia and drug resistance. Other current research projects include the development of implantable, biocompatible microelectrodes for neural prosthetics; nanofiber scaffolds for neural regeneration; and tissue engineering through inkjet printing of living cells and tissue scaffold materials.

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