CBR Virtual Summer Seminar Series

Wednesday, July 7 | 11:00am - 12:00pm PT

Tanya Bennet (top left), Jessica Hua (bottom left), Vinny Randhawa (top middle), Dr. Karen Cheung (bottom middle), Tiffany Cameron (far right)

Dr. Karen Cheung, *Professor*
Department of Electrical & Computer Engineering
Director, Graduate Biomedical Engineering Program & Associate Director
Member, Centre for Blood Research

Topic: "Organs-on-Chip: Design Considerations and Applications"
Presented by: Tanya Bennet, Vinny Randhawa, Jessica Hua and Tiffany Cameron

Organs-on-chips are small-scale tissues containing living cells that mimic organ structures, and they show strong potential for improving preclinical-to-clinical translation during drug development. We are developing a microfluidic organ-on-chip model that incorporates a novel 3-dimensional extracellular matrix and an architecture comprising a epithelial layer and endothelial-lined lumen with stromal cells to model small airways in Chronic Obstructive Pulmonary Disease (COPD). We aim to characterize the response of airways-on-a-chip to woodsmoke or cigarette smoke. We will develop new microscopy methods to monitor how these tissues respond to compounds or stressors. We are also developing a microfluidic model of the brain microvasculature, with applications for studying neurodegenerative disease. This presentation will highlight several projects in our laboratory in organs-on-chip.