



Centre for  
**Heart Lung Innovation**  
UBC and St. Paul's Hospital

## Centre for Heart Lung Innovation Seminar Series

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### **Illuminating the Mechanics of Artificial Versus Physiological Breathing**



**Mona Eskandari, PhD**  
**Assistant Professor**  
**Department of Mechanical Engineering (Cooperating Faculty title in the School of Medicine's multidisciplinary BREATHE centre)**  
**University of California Riverside**

Friday November 18<sup>th</sup>, 11:30 – 12:30 PM  
Gourlay Conference Centre, Room 103  
**(ZOOM Meeting ID: 662 2255 0438; passcode: 623137)**

Hosted by Chun Seow

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*"In order to understand and mitigate ventilator-induced lung injury (VILI), we compare the mechanics of modern artificial ventilators (positive-pressure ventilation; PPV) to physiological breathing (negative-pressure ventilation; NPV) using an innovative multi-apparatus interface developed in our lab to minimize confounding factors by subjecting the same lung specimens to both loading modes. The analysis of global pressure-volume curves coupled with local tissue-level deformations elucidates this long standing debate in the pulmonary community by providing exclusive evidence demonstrating that although the global response between PPV and NPV may be matched, the organ energetics and viscoelasticity along with the local stretch and distortions of NPV are notably reduced."*

*This event is a Self-Approved Group Learning Activity as defined by the Maintenance Certification Program of the Royal College of Physicians and Surgeons of Canada*



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