**Faculty Name:**

Gordana Vunjak-Novakovic

**Faculty Email:**

Gv2131@columbia.edu

**Lab:**

Laboratory for Stem Cells and Tissue Engineering

**Project Title:**

Lung Bioreactors to Model Gene Therapy of Cystic Fibrosis

**Description:**

We developed lung bioreactor models that allow for multiplexed, nondestructive monitoring of tissue function and for gene delivery through clinically relevant means. A small “mucosal tissue bioreactor” houses thin slices of mucosa in air-liquid interface culture in a chamber designed for grab-and-go non-destructive monitoring.

Multiscale lung bioreactors can be used to model CF lung disease in ways that permit both high-throughput and at-scale testing of putative gene therapeutics. A focus on the CF biophysical environment, including viscous airway mucus, helps to address specific barriers. This model recapitulates the CF lung environment to enable high-throughput and clinical-scale testing of CF gene therapy.

**Location of Research:**

On Site

**# of hrs/week:**

35

**Department/Program:**

Biomedical Engineering

**Eligibility:**

MS

**To apply, please contact:**

Gordana Vunjak-Novakovic

Gv2131@columbia.edu