PhD student position - Biomedical Engineering - Pulmonary surfactant project
Stevens Institute of Technology

Job Title	PhD student position - Biomedical Engineering - Pulmonary surfactant project
Department	Biomedical Engineering
Institution	Stevens Institute of Technology Hoboken, New Jersey
Date Posted	Mar. 11, 2025
Application Deadline	Open until filled
Position Start Date	Fall 2025 semester
Job Categories	Graduate Student
Academic Field(s)	Engineering Physics Engineering Mechanics Chemical/Petroleum Bioengineering (all Bio-related fields)
Apply By Email	cperlman@stevens.edu

Job Description

In vitro biophysics project – improving efficacy of pulmonary surfactant to increase survival following mechanical ventilation of lung injury patients.

BACKGROUND: Our lab discovered that an existing molecule lowers surface tension in the lungs and, during mechanical ventilation of injured lungs, reduces ventilation injury and improves oxygenation. The molecule is a promising potential therapeutic for treating acute lung injury, such as that caused by COVID-19.

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OPENING/PROJECT: An opening is available for a Ph.D. student to work on a biophysics project. The project will comprise working with an in vitro surfactometer to replicate the effect of the therapeutic on pulmonary surfactant and investigate mechanism of action.

The project will focus on biophysical investigations. Depending on the background of the student, it may also include development of an image analysis-guided Matlab- or microcontroller-implemented feedback system or chemical modification of a small molecule.

REQUIREMENTS: The ideal candidate will have bachelor's degree in biophysics, biomedical engineering, physics chemistry or a closely-related discipline. The candidate will preferably have a master's degree as well. The candidate will be hard-working, inquisitive, creative, logical, disciplined and organized, with strong oral and written communication skills.

THE PI: Dr. Perlman holds a bachelor's degree in mechanical engineering from MIT and a Ph.D. in biomedical engineering from Northwestern University. She trained in pulmonary physiology as a postdoctoral fellow at Columbia University. She is an expert on surface tension effects on lung micromechanics in the context of ventilator induced lung injury.

ENVIRONMENT: Stevens Institute of Technology is located on a beautiful campus overlooking the Hudson River and directly across from New York City. The Biomedical Engineering department at Stevens is a supportive environment in which to work.

TO APPLY: Please email Dr. Perlman expressing interest in the position and including copies of your CV, transcripts and scores for the GRE, if available, and any other standardized tests taken.

ADDITIONAL INFORMATION:
Faculty website
Lab website
BME Ph.D. program at Stevens
Stevens Institute of Technology

Keywords: Biophysics, in vitro surfactometer studies, surface chemistry, pulmonary physiology, lung mechanics

EEO/AA Policy

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Stevens Institute of Technology is an equal opportunity employer. Additional information is available at http://www.stevens.edu/hr/employment.shtml

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

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