

# Novel Bioreactor and Tissue Culture Systems

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## Technology description

### Overview

A tissue culture system has been developed involving uniaxial and biaxial bioreactors. Our novel system offers a way to pre-stretch tissues and cell-seeded membranes and transfer them to a bioreactor or mechanical testing system in a highly convenient and minimally disruptive way. This invention facilitates pre-stretching membranes in preparation for seeding cells or mechanical testing. Once pre-stretched, this invention allows imaging during the cell-seeding process. The prestretched membrane can then be transferred to a bioreactor with minimal disturbance (bending, twisting, stretching, etc.) to the membrane.

### Research Interests

Biomechanical Factors in Medical Device Design

Multi-scale Experimental and Computational Biomechanics

Mechanical Characterization of Tissues and Tissue Engineered Constructs

Orthopedic Biomechanics



**TECHNOLOGY  
COMMERCIALIZATION**

## Application area

This invention is useful in any application that requires precision control over the mechanical strains applied tissues and membranes before performing mechanical testing and bioreactor studies

## Advantages

### Non-disruptive

Can be customized and adapted for any required application involving stretching of cell-seeded membranes or tissues

Institution

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