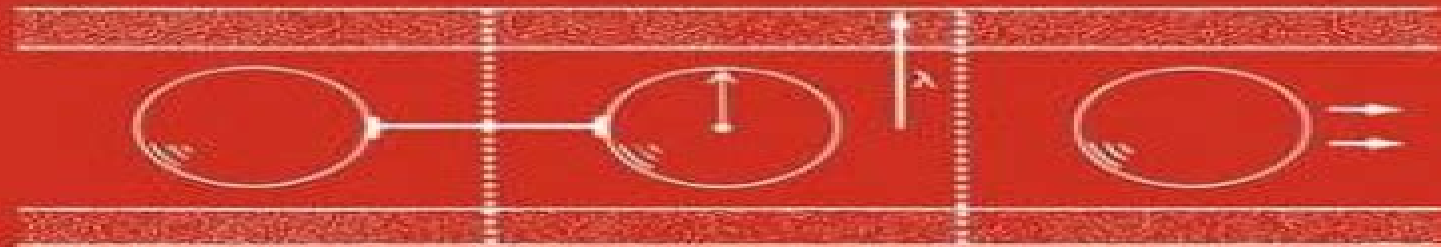


**Mary A. Farrell Epstein**  
**James R. Ligas**  
Editors

# **Respiratory Biomechanics**

*Engineering Analysis of  
Structure and Function*



**Springer-Verlag**

# Respiratory Biomechanics Engineering Analysis Of Structure And Function

**RJ Alexander**



## **Respiratory Biomechanics Engineering Analysis Of Structure And Function:**

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Ligas, 1990-09-04 This proceedings volume brings together the invited papers from the Respiratory Biomechanics Symposium of the First World Congress of Biomechanics held in La Jolla California from August 3D September 4 1990 The respiratory system offers many opportunities to apply the different branches of traditional mechanics Tissue defonnations and stresses during lung expansion can be analyzed using the principles of solid mechanics Fluid mechanical problems in the lung are unique There is the matched distribution of two fluids gas and blood in two beautifully intertwined branched conduit systems The reversing flow of the gas phase presents different problems than the pulsatile flow of the non Newtonian fluid that is the blood On the smaller scale there is the flux of fluids and solutes across the capillary membrane Finally there is the problem of coupling fluid and solid mechanics to understand the overall behavior of the respiratory system In this symposium we have chosen to address the basic processes that contribute to the gas and fluid exchange functions of the lung Section 1 Lung Tissue Mechanics provides an historical background and then presents more recent work on the structure of the lung parenchyma the mechanics of the tissue and the effects of the bounding membrane the visceral pleura **Introduction to**

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An Introductory Text to Bioengineering Shu Chien,Peter C. Y. Chen,Yuan-cheng Fung,2008 This bestselling textbook will introduce undergraduate bioengineering students to the fundamental concepts and techniques with the basic theme of integrative bioengineering It covers bioengineering of several body systems organs tissues and cells integrating physiology at these levels with engineering concepts and approaches novel developments in tissue engineering regenerative medicine nanoscience and nanotechnology state of the art knowledge in systems biology and bioinformatics and socio economic aspects of bioengineering One of the distinctive features of the book is that it is integrative in nature integration of biology medicine and engineering across different levels of the biological hierarchy and basic knowledge with applications It is unique in that it covers fundamental aspects of bioengineering cutting edge frontiers and practical applications as well as perspectives of bioengineering development Furthermore it covers important socio economical aspects of bioengineering such as ethics and entrepreneurship     Current Catalog National Library of Medicine (U.S.),1991 First multi year cumulation covers six years 1965 70

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**College of Engineering Publications** ,1990      **Research Awards Index** ,1989      *Subject Index of Current Research Grants and Contracts Administered by the National Heart, Lung and Blood Institute* National Heart, Lung, and Blood Institute,1977      University of Michigan Official Publication University of Michigan,1980 Each number is the catalogue of a specific school or college of the University      Journal of Applied Mechanics ,1993      **Biomedical Index to**

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