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and Migration4. Role of PDGF Signaling Pathways in Mediating Smooth Muscle Cell Proliferation and Migration in Response to Non-uniform Fluid Shear Stress; 5. Concluding Remarks; References; Chapter 5: Illuminating a Path: Role of Biomechanics in Understanding Adaptive Remodeling in the Microcirculation Thomas C. Skalak; 1. Let There Be Light - UCSD, Dr. Fung, and Biomechanics; 2. First Meeting with Dr. Fung; 3. A Great Mentor; 4. Memories; 5. Influences; References Chapter 6: Computational Simulations of the Buckling of Oval and Tapered Arteries Avione Northcutt, Parag Datir and Hai-Chao Han1. Introduction; 2. Methods; 2.1. Artery Models; 2.2. Material Model; 2.3. Loads and Boundary Conditions; 2.4. Finite Element Analysis; 3. Results; 3.1. Buckling of Circular Cylindrical Arteries; 3.2. The Effect of Oval Cross-Section; 3.3. The Effect of Vessel Tapering; 4. Discussion; 4.1. Clinical Relevance; 4.2. Limitations; 4.3. Significance; Acknowledgments; References
Chapter 7: Role of Structural and Signaling Molecules in Cardiac Mechanotransduction Anna M. Raskin, Andrew D. McCulloch and Jeffrey H. Omens1. Introduction; 2. Cardiac Hypertrophy; 3. Myocardial Stress and Strain Regulate Cardiac Muscle Growth; 4. Mechanotransduction; 4.1. Role of the nucleus in mechanotransduction; 4.2. Role of z-disk and sarcomeric proteins in mechanotransduction; 4.2.1. Titin; 4.2.2. Muscle LIM protein; 4.2.3. Four and a half LIM domain protein; 4.2.4. Troponin C; 4.3. Role of sarcolemmal proteins in mechanotransduction; 4.3.1. Integrins; 4.3.2. Phospholipase C
4.3.3. G-protein coupled receptors

Sommario/riassunto

This book is a tribute to Professor Yuan-Cheng Fung, the Father of Biomechanics and a pioneer in Bioengineering, in honor of his 90th Birthday. The book consists of articles contributed by his colleagues, students, friends and family. These articles illustrate Professor Fung's profound influence on outstanding leaders in bioengineering, especially biomechanics, and on the life and work of all people who have been in contact with him. The scientific topics covered range from fundamentals of science and engineering (e.g., residual stress, flow dynamics, and cellular signaling) to clinical disor

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