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| Soggetti | Biomedical engineering<br>Cancer research<br>Oncology<br>Biomedical Engineering/Biotechnology<br>Cancer Research<br>Biomedical Engineering and Bioengineering<br>Oncology |
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| Nota di contenuto | Biomaterials in Mechano-oncology: Means to Tune Materials to Study Cancer -- Traction Force Microscopy for Non-Invasive Imaging of Cell Forces -- Non-Invasive Imaging: Brillouin Confocal Microscopy -- Exposing Cell-itary Confinement: Understanding The Mechanisms Of Confined Single Cell Migration -- Modeling Cell Migration Mechanics -- Engineered models of metastasis with application to study cancer biomechanics -- Microenvironment influences cancer cell mechanics from tumor growth to metastasis -- From Cancer Immunoediting to New Strategies in Cancer Immunotherapy: The Roles of Immune Cells and Mechanics in Oncology -- Biomechanics of the circulating tumor cell microenvironment -- Mechanics of the cell nucleus -- Mechanical Forces in Tumor Angiogenesis -- DNA Mechanics and Topology -- Design of Fiber Networks for Studying Metastatic Invasion -- Extracellular matrix stiffness exists in a feedback loop that drives tumor progression -- Platelet-Based Drug Delivery for Cancer Applications -- The National Cancer Institute Investment in |

Biomechanics in Oncology Research.

Sommario/riassunto

This book covers multi-scale biomechanics for oncology, ranging from cells and tissues to whole organ. Topics covered include, but not limited to, biomaterials in mechano-oncology, non-invasive imaging techniques, mechanical models of cell migration, cancer cell mechanics, and platelet-based drug delivery for cancer applications. This is an ideal book for graduate students, biomedical engineers, and researchers in the field of mechanobiology and oncology. This book also: Describes how mechanical properties of cancer cells, the extracellular matrix, tumor microenvironment and immuno-editing, and fluid flow dynamics contribute to tumor progression and the metastatic process Provides the latest research on non-invasive imaging, including traction force microscopy and brillouin confocal microscopy Includes insight into NCIs' role in supporting biomechanics in oncology research Details how biomaterials in mechano-oncology can be used as a means to tune materials to study cancer.