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Nota di contenuto	Preface -- Embryonic and Adult Stem Cells in Vasculogenesis and Angiogenesis -- Extracellular Matrix and Matrix Metalloproteinase in Vascular Morphogenesis -- Scaffolding for Three-Dimensional Embryonic Vasculogenesis -- Matrix Viscoelasticity and Remodeling During 3D Vascular Assembly -- Biomechanical Properties of Implanted Scaffolds Affect Human Blood Vessel Formation From Circulating Endothelial Colony Forming Cells -- Oxygen Regulation of Adult Angiogenesis -- Hypoxia During Embryonic Vascular Development and Differentiation -- Three-Dimensional Regulation During Cancerous Angiogenesis -- Microfluidics to Control Shear and Oxygen Flow for Vascular Differentiation -- Cyclic Strain and Surface Shape for Engineered Vasculature Constructs -- Matrix Topography and Viscoelasticity Guide Vascular Assembly.
Sommario/riassunto	This book updates and expands on various aspects of the vasculature’s microenvironment and how these regulate differentiation and assembly. Discussed in this new edition are efforts to capitalize on combining engineering techniques, to study and manipulate various

biophysical cues, including: endothelial cell-pericyte interactions (Davis), mechanical forces to regulate vascularization in three-dimensional constructs (Levenberg), how matrix properties and oxygen tension regulate vascular fate and assembly (Gerecht), biophysical cues in relation to vascular aging (Ferreira), 3D printing of complex vascularized tissue (Hibino), the harnessing of biophysical cues for therapeutic vasculature interfacing with the damaged brain (Segura) and finally, the infarcted heart (Grayson). This second edition of Biophysical Regulation of Vascular Differentiation and Assembly provides an interdisciplinary view of vasculature regulation through various biophysical cues and presents recent advances in measuring and controlling such parameters. This book will be of interest to biologists, biophysicists and engineers who work with vascular differentiation and assembly.