1. Record Nr. UNINA9910968565403321

Titolo	Control theory and systems biology / / edited by Pablo A. Iglesias and Brian P. Ingalls
Pubbl/distr/stampa	Cambridge, MA, : MIT Press, 2009
ISBN	9786612694554 9781282694552 1282694553 9781615832347 1615832343 9780262258906 0262258900
Edizione	[1st ed.]
Descrizione fisica	1 online resource (359 p.)
Altri autori (Persone)	IglesiasPablo A. <1964-> IngallsBrian P. <1974->
Disciplina	571.7
Soggetti	Biological control systems Control theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Preface; 1 A Primer on Control Engineering; 2 Modeling and Analysis of Stochastic Biochemical Networks; 3 Spatial Modeling; 4 Quantifying Properties of Cell Signaling Cascades; 5 Control Strategies in Times of Adversity; 6 Synthetic Biology; 7 Graphs and the Dynamics of Biochemical Networks; 8 A Control-Theoretic Interpretation of Metabolic Control Analysis; 9 Robustness and Sensitivity Analyses in Cellular Networks; 10 Structural Robustness of Biochemical Networks; 11 Robustness of Oscillations in Biological Systems; 12 A Theory of Approximation for Stochastic Biochemical Processes 13 System-Theoretic Approaches to Network Reconstruction 14 Identification of Biochemical Reaction Networks Using a Parameter-Free Coordinate System; References; Contributors; Index
Sommario/riassunto	This is a survey of how engineering techniques from control and systems theory can be used to help biologists understand the

behaviour of cellular systems.