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Titolo	Applications of Dynamical Systems in Biology and Medicine [[electronic resource] /] / edited by Trachette Jackson, Ami Radunskaya
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Descrizione fisica	1 online resource (240 p.)
Collana	The IMA Volumes in Mathematics and its Applications, , 0940-6573 ; ; 158
Disciplina	610
Soggetti	Biomathematics Mathematical physics Dynamics Ergodic theory Mathematical and Computational Biology Mathematical Applications in the Physical Sciences Dynamical Systems and Ergodic Theory Congresses.
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.
Nota di contenuto	Anti-Cancer Drug Resistance: A Pre-existing or Emerging Phenomenon? -- Modeling Fluid Flow Induced by Bacterial Carpets -- Modeling Auto regulation in the Kidney -- Modeling Anti-coagulation Therapy -- Mathematical Modeling of Evolutionary Diversification -- Intermittent Preventative Treatment (IPT) and the Spread of Drug Resistance to Malaria -- Stochastic Modeling of the Phototransduction Cascade for Melanopsin -- Clustering in Inhibitory Neural Networks with Nearest Neighbor Coupling -- Modeling the Dynamics of REM Sleep.
Sommario/riassunto	This volume highlights problems from a range of biological and medical applications that can be interpreted as questions about system behavior or control. Topics include drug resistance in cancer and malaria, biological fluid dynamics, auto-regulation in the kidney, anti-coagulation therapy, evolutionary diversification and photo-transduction. Mathematical techniques used to describe and investigate these biological and medical problems include ordinary,

partial and stochastic differentiation equations, hybrid discrete-continuous approaches, as well as 2 and 3D numerical simulation. .
