1.	Record Nr.	UNINA9910254064903321
	Titolo	Nonlinear Dynamics in Biological Systems / / edited by Jorge Carballido-Landeira, Bruno Escribano
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
	ISBN	3-319-33054-3
	Edizione	[1st ed. 2016.]
	Descrizione fisica	1 online resource (VII, 128 p. 39 illus., 31 illus. in color.)
	Collana	SEMA SIMAI Springer Series, , 2199-3041 ; ; 7
	Disciplina	612.76
	Soggetti	Statistical physics Mathematical physics Biomathematics Applications of Nonlinear Dynamics and Chaos Theory Theoretical, Mathematical and Computational Physics Mathematical and Computational Biology
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	1 Jacobo Aguirre and Michael Stich: Modeling of evolving RNA replicators -- 2 Ramon Xulvi-Brunet, Gregory W. Campbell, Sudha Rajamani, José I. Jiménez and Irene A. Chen: Quantitative analysis of synthesized nucleic acid pools -- 3 Till D. Frank, Miguel A.S. Cavadas, Lan K. Nguyen and Alex Cheong: Non-linear dynamics in transcriptional regulation: biological logic gates -- 4 Sergio Alonso: Pattern formation at cellular membranes by phosphorylation and dephosphorylation of proteins -- 5 Luca Gerardo-Giorda: An introduction to mathematical and numerical modeling of heart electrophysiology -- 6 Blas Echebarria, Enric Alvarez-Lacalle, Inma R. Cantalapiedra and Angelina Peñaranda: Mechanisms underlying electro-mechanical cardiac alternans.
	Sommario/riassunto	This book presents recent research results relating to applications of nonlinear dynamics, focusing specifically on four topics of wide interest: heart dynamics, DNA/RNA, cell mobility, and proteins. The book derives from the First BCAM Workshop on Nonlinear Dynamics in Biological Systems, held in June 2014 at the Basque Center of Applied

Mathematics (BCAM). At this international meeting, researchers from different but complementary backgrounds, including molecular dynamics, physical chemistry, bio-informatics and biophysics, presented their most recent results and discussed the future direction of their studies using theoretical, mathematical modeling and experimental approaches. Such was the level of interest stimulated that the decision was taken to produce this publication, with the organizers of the event acting as editors. All of the contributing authors are researchers working on diverse biological problems that can be approached using nonlinear dynamics. The book will appeal especially to applied mathematicians, biophysicists, and computational biologists.