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Soggetti	Mathematics Applications of Mathematics
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Nota di contenuto	- Controlling the spread of an epidemic in agriculture: the case of Xylella fastidiosa. A research project -- Predicting and explaining with models: A few remarks on Mathematical Immunology -- A scenario-based study on hybrid PDE-ODE model for Cancer-on-chip experiment -- The Effect of Substratum Stiffness and Stochasticity on Cell Reorientation over a Stretched Substratum -- Kinetic and macroscopic equations for action potential in neural networks -- Mechanics-Based Models to Predict the Alignment of Cells on a Cyclically Stretched Substrate -- Modelling of Cancer Stem Cell Driven Solid Tumors -- Optimal strategies for pathological epidermis:the optimal control of basal cell dynamics -- On the qualitative behaviour of oscillating biochemical systems: the stochastic approach -- What is a good model? -- Within-host and between-hosts epidemic dynamics: a journey with Alberto -- Diffusion Phenomena on Metric Graphs -- Challenging age-structured and first order transition cell cycle models of cell proliferation.

The book "Problems in Mathematical Biophysics - a volume in memory of Alberto Gandolfi" aims at reviewing the current state of the art of the mathematical approach to various areas of theoretical biophysics. Leading authors in the field have been invited to contribute, having a strong appreciation of Alberto Gandolfi as a scientist and as a man and sharing his same passion for biology and medicine, as well as his style of investigation. Encompassing both theoretical and practical aspects of Mathematical Biophysics, the topics covered in this book span a spectrum of different problems, in biology, and medicine, including population dynamics, tumor growth and control, immunology, epidemiology, ecology, and others. As a result, the book offers a comprehensive and current overview of compelling subjects and challenges within the realm of mathematical biophysics. In their contributions, the authors have effectively conveyed not only their research findings but also their peculiar perspective and approach to problem-solving, dealing with oncology, epidemiology, neuro-sciences, and biochemistry. The chapters pertain to a wide array of mathematical areas such as continuous Markov chains, partial differential equations, kinetic theory, applied statistical mechanics, noise-induced transitions, and many others.

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