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	Nota di contenuto	1. An Overview of the Translational Dilemma and the Need for Model-based Precision Medicine -- 2 Translational Equation-based Modeling -- 3. Agent-based Modeling in Translational Systems Biology -- 4. Integrating Data-driven and Mechanistic Modeling in Sepsis and Trauma -- 5. Therapeutics as Control: Model-based approaches for control discovery -- 6. Disorder of Systemic Inflammation in Sepsis and Trauma: A Systems Perspective -- 7. Multi-scale equation-based models: Insights for Inflammation and Physiological Variability -- 8. In silico Trials and Personalized Therapy for Sepsis and Trauma -- 9. Computational Modeling of the Coagulation Response -- 10. Disorder of Localized Inflammation in Wound Healing -- 11. Equation-based Models of Wound Healing and Collective Cell Migration -- 12. Agent-based Models of Wound Healing -- 13. Tissue realistic translational modeling of gut inflammation -- 14. Data-Driven Modeling of Liver Injury, Inflammation, and Fibrosis -- 15. Computational Modeling of Tuberculosis -- 16. The Rationale and Implementation of Model-based Precision Medicine for Inflammatory Diseases -- Index.
	Sommario/riassunto	This second edition expands upon and updates the vital research covered in its predecessor, by presenting state-of-the-art multidisciplinary and systems-oriented approaches to complex diseases arising from and driven by the acute inflammatory response. The chapters in this volume provide an introduction to different types

of computational modeling, and how these methods can be applied to specific inflammatory diseases, with a focus on providing readers a roadmap for integrating advanced mathematical and computational techniques with traditional experimental methods. In this second edition, we cover both well-established and emerging modeling methods, especially state-of-the-art machine learning approaches and the integration of data-driven and mechanistic modeling. This volume introduces the concept of Model-based Precision Medicine as an alternative approach to the current view of Precision Medicine, based on leveraging mechanistic computational modeling to decrease cost while increasing the information value of the data being obtained. By presenting the role of computational modeling as an integrated component of the research process, Complex Systems and Computational Biology Approaches to Acute Inflammation: A Framework for Model-based Precision Medicine offers a window into the recent past, the present, and the future of computationally-augmented biomedical research.