

# Contents

## **Elastic Growth Models**

*Alain Goriely, Mark Robertson-Tessi, Michael Tabor, Rebecca Vandiver . 1*

## **A Model of Pattern Coupled to Form in Metazoans**

*Frederick W. Cummings ..... 45*

## **Mathematical Modeling of HIV-1 Infection and Drug Therapy**

*Libin Rong, Zhilan Feng, Alan S. Perelson ..... 87*

## **Overcoming the Key Challenges in De Novo Protein Design: Enhancing Computational Efficiency and Incorporating True Backbone Flexibility**

*Christodoulos A. Floudas, Ho Ki Fung, Dimitrios Morikis, Martin S.  
Taylor, Li Zhang..... 133*

## **An Improved Heuristic for Consistent Biclustering Problems**

*Artyom Nahapetyan, Stanislav Busygin, Panos Pardalos ..... 185*

## **The Steiner Tree Problem and Its Application to the Modelling of Biomolecular Structures**

*Ruben P. Mondaini ..... 199*

## **Phenotypic Switching and Mutation in the Presence of a Biocide: No Replication of Phenotypic Variant**

*Brenda Tapia-Santos, Jorge X. Velasco-Hernández ..... 221*

## **From Spatial Pattern in the Distribution and Abundance of Species to a Unified Theory of Ecology: The Role of Maximum Entropy Methods**

*John Harte..... 243*

**Protein Structure and Its Folding Rate**

*Alexei V. Finkelstein, Dmitry N. Ivankov, Sergiy O. Garbuzynskiy,  
Oxana V. Galzitskaya* ..... 273

**Index** ..... 303