entropy

IMPACT FACTOR 1.821

Special Issue

# Biological Statistical Mechanics

*Guest Editors:*

**Prof. Giuliani Alessandro**
Environment and Health Department, Istituto Superiore di Sanità, Roma 00161, Italy
alessandro.giuliani@iss.it

**Prof. Mariano Bizzarri**
Department of Experimental Medicine, Systems Biology Group Lab, Sapienza University of Rome, Rome, Italy
Mariano.Bizzarri@uniroma1.it

*Deadline for manuscript submissions:*
*28 October 2018*

## Message from the Guest Editors

Dear Colleagues,

Any natural entity can be imagined as a system made up of interacting elements. This allows for the development of phenomenological "laws" shared by network-like systems only dependent on their wiring architecture. We can compare this situation with the success of classical thermodynamics, even if the founding fathers of this science were erroneously convinced that heat was a fluid. The difference with classical thermodynamics is that in the case of biological systems we cannot rely on macro-parameters like volume or pressure, but we must seriously consider the particular correlation structure of the system at hand. This is why focusing on state transitions (e.g., differentiation, development, onset of diseases, ecosystem de-stabilization) in which we expect abrupt changes of the system correlation structure is probably the most fruitful direction to establish a "biological statistical mechanics". This Special Issue is devoted to the collection of statistical mechanics-inspired approaches to biological systems at any scale of definition from cell biology to ecology and epidemiology. The issue is of crucial importance given the evident failure of strictly deterministic molecular biology approaches to predicting system-level properties of biological entities.

Prof. Giuliani Alessandro
Prof. Mariano Bizzarri
*Guest Editors*

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.
**High visibility:** indexed by the Science Citation Index Expanded (Web of Science), MathSciNet (AMS), Inspec (IET), Scopus and other databases.
**Rapid publication:** manuscripts are peer-reviewed and a first decision provided to authors approximately 26 days after submission; acceptance to publication is undertaken in 4 days (median values for papers published in this journal in first half of 2017).

MDPI
www.mdpi.com

*Entropy* Editorial Office, entropy@mdpi.com
St. Alban-Anlage 66, 4052 Basel, Switzerland
Tel. +41 61 683 77 34, Fax: +41 61 302 89 18

mdpi.com/si/13099