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Information Theory in Molecular Evolution: From Models to Structures and Dynamics

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Message from the Guest Editor

In recent years, there has been a growing interest in using tools from information theory and statistical physics to quantify and model evolutionary processes.

This Special Issue aims to collect novel contributions in this interdisciplinary field. We are especially interested in submissions that use information theoretical concepts as a core but are tightly integrated with the study of molecular processes. Applications may include novel evolutionary models, the application of phylogenetic signals to elucidate the biomolecular structure and function, and biomolecule engineering inspired by evolutionary cues. Also of interest for this issue are applications of entropy to the study of de novo gene birth, including the emergence of essential, taxonomically-restricted genes, as well as the dynamics of biomolecules, including molecular dynamics and biophysical modeling. Finally, biomedical applications related to mutational change and the use of statistical techniques to study viral evolution and disease are encouraged.

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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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