

Special Issue on **Computational Models for Evolutionary Developmental Biology (Evo-Devo)**

CALL FOR PAPERS

Evolutionary and developmental biology (Evo-Devo) is focused on the investigation and the elucidation of the molecular mechanisms underlying embryonic development from one generation to the other. Its study began early on, with Darwin and Mendel, but it soon became apparent that these mechanisms are a complicated network of interacting genes following stimuli from molecules, our microbiome, other organisms or species, and the environment that we live in. However, in recent years the accumulation of big data in the fields of genomics, medical records, climate observatories, and other relevant datasets has rendered the study of Evo-Devo impossible without the aid of advanced and highly sophisticated computational models. Herein, we opt to address the challenge of setting up a computational framework for the description of evolutionary and developmental biology through a holistic and seamless integration of bioinformatics, genetics, and molecular evolution.

More specifically, this special issue aims to address the new developments in the rapidly evolving field of Evo-Devo in the realms of big data and computational modelling. Original research articles discussing recent biological and medical breakthroughs in the Evo-Devo field are welcomed, alongside all relevant advances from the realm of supercomputers, big-data science, and algorithm design. Additionally, review articles encompassing recent advances and the development of current and future trends are also more than welcomed.

Potential topics include but are not limited to the following:

- ▶ Mathematical models for phenotypic diversity
- ▶ Genetic networks & gene regulatory networks
- ▶ Algorithms and models for gene expression
- ▶ Evolution & phylogenetic analysis
- ▶ Big data and computational modelling
- ▶ Mathematical models on intraspecific variation
- ▶ Structural aspects of evolutionary and developmental biology
- ▶ Mathematical models and algorithms for phenotypic plasticity

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/cmmm/mcmed/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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