



## Developmental Biology: Computational and Experimental Approaches

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Deadline for manuscript  
submissions:

**30 September 2024**

### Message from the Guest Editor

Developmental biology investigates ontogenesis that is how step-by-step, single cells (e.g., animal zygotes) turn into multicellular organisms of proper shape, size and structure, which altogether provide all functions during whole life cycle. Molecular mechanisms of both signal transduction and gene regulation networks are elementary basis of ontogenesis within biological organization hierarchy, where they interfere with each other from cellular processes (e.g., differentiation and migration) through morphogenesis up to whole life cycle. Apropos normal development, everything develops normally, whereas developmental abnormalities - premature aging, neurodegeneration, tumorigenesis, induced pluripotent cells, wound healing, post-traumatic repair, regeneration, assisted reproductive technologies, stress-induced epigenetic reprogramming, - which have just become challenges for the post-genome experimental-computational biology, are waiting for their pioneers able to contribute predictive preventive personalized participatory (4P) medicine.





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