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Networks in Cancer: From Symmetry Breaking to Targeted Therapy

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Accounting for spatiotemporal characteristics of tumor–host interaction networks, when analyzing cancer growth and therapy response, is a promising path in oncology. Mathematical and computational oncology can play an important role in extrapolating findings from in vitro experiments to in vivo conditions by means of in silico models. Such approaches allow for simulations of cancer therapies and their effects on the underlying network-level interactions (e.g., tumor–immune interplay, gene regulatory networks, signal transduction networks, and proteolytic networks). Closing the loop, the captured insights can be used to make predictions about cancer progression and response to therapy on a patient-specific basis.

This Special Issue will gather the latest developments in mathematical and computational oncology tools for the modeling, analysis, and simulation of cancer network-level interactions.

We are soliciting contributions (research and review articles) on mathematical and computational oncology, including (though not limited to) tools and systems for cancer networks modeling, analysis, and simulation.



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Special Issue



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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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