

Using game theory to understand the physics of cancer propagation

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In search of a different perspective on the physics of cancer, Princeton University and University of California, San Francisco researchers teamed up to use game theory to look for simplicity within the complexity of the dynamics of cooperator and cheater cells under metabolic stress conditions and high spatial heterogeneity. In the context of cancer, cooperator cells obey the general rules of communal survival, while cheater cells do not.

The ultimate goal of this research was to gain an understanding of the dynamics of cancer tumor evolution under stress. Since cancer can be likened to a community of bacteria, the researchers zeroed in on a simple bacterial model to examine the progression of resistance to drugs under high competition and [stress conditions](#).

Among their key findings: they discovered emergent cooperative outcomes between the two cell types after modifying their game theory framework to account for heterogeneous stress patterns.

More information: "Physics of cancer propagation: A game theory perspective" is published in *AIP Advances*.

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