

Natalia L Komarova

List of Publications by Year in descending order

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Version: 2024-02-01

108
papers

4,397
citations

147801

31
h-index

123424

61
g-index

122
all docs

122
docs citations

122
times ranked

4524
citing authors

#	ARTICLE	IF	CITATIONS
1	The role of chromosomal instability in tumor initiation. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 16226-16231.	7.1	484
2	Drug resistance in cancer: Principles of emergence and prevention. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 9714-9719.	7.1	380
3	Curcumin mediates chemosensitization to 5-fluorouracil through miRNA-induced suppression of epithelial-to-mesenchymal transition in chemoresistant colorectal cancer. Carcinogenesis, 2015, 36, 355-367.	2.8	200
4	Mutationâ€“selection networks of cancer initiation: tumor suppressor genes and chromosomal instability. Journal of Theoretical Biology, 2003, 223, 433-450.	1.7	180
5	Stochastic modeling of drug resistance in cancer. Journal of Theoretical Biology, 2006, 239, 351-366.	1.7	108
6	Evolutionary dynamics of feedback escape and the development of stem-cellâ€“driven cancers. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 18983-18988.	7.1	105
7	Tumor growth dynamics: insights into evolutionary processes. Trends in Ecology and Evolution, 2013, 28, 597-604.	8.7	103
8	Symmetric vs. Asymmetric Stem Cell Divisions: An Adaptation against Cancer?. PLoS ONE, 2013, 8, e76195.	2.5	103
9	ODE models for oncolytic virus dynamics. Journal of Theoretical Biology, 2010, 263, 530-543.	1.7	102
10	InÂVivo HIV-1 Cell-to-Cell Transmission Promotes Multicopy Micro-compartmentalized Infection. Cell Reports, 2016, 15, 2771-2783.	6.4	101
11	The optimal rate of chromosome loss for the inactivation of tumor suppressor genes in cancer. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7017-7021.	7.1	90
12	Spatial Stochastic Models for Cancer Initiation and Progression. Bulletin of Mathematical Biology, 2006, 68, 1573-1599.	1.9	86
13	Evolution of ibrutinib resistance in chronic lymphocytic leukemia (CLL). Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 13906-13911.	7.1	86
14	Kinetics of CLL cells in tissues and blood during therapy with the BTK inhibitor ibrutinib. Blood, 2014, 123, 4132-4135.	1.4	86
15	Calculated treatment. Nature, 2013, 499, 291-292.	27.8	74
16	Effect of Cellular Quiescence on the Success of Targeted CML Therapy. PLoS ONE, 2007, 2, e990.	2.5	72
17	Dynamics of Genetic Instability in Sporadic and Familial Colorectal Cancer. Cancer Biology and Therapy, 2002, 1, 685-692.	3.4	69
18	High Degree of Heterogeneity in Alzheimer's Disease Progression Patterns. PLoS Computational Biology, 2011, 7, e1002251.	3.2	69

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19	The duality of spatial death–birth and birth–death processes and limitations of the isothermal theorem. <i>Royal Society Open Science</i> , 2015, 2, 140465.	2.4	69
20	A theoretical framework for specificity in cell signaling. <i>Molecular Systems Biology</i> , 2005, 1, 2005.0023.	7.2	64
21	Replicator–mutator equation, universality property and population dynamics of learning. <i>Journal of Theoretical Biology</i> , 2004, 230, 227-239.	1.7	62
22	Virus dynamics in the presence of synaptic transmission. <i>Mathematical Biosciences</i> , 2013, 242, 161-171.	1.9	61
23	Patterns of the COVID-19 pandemic spread around the world: exponential versus power laws. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20200518.	3.4	58
24	Combination of Two but Not Three Current Targeted Drugs Can Improve Therapy of Chronic Myeloid Leukemia. <i>PLoS ONE</i> , 2009, 4, e4423.	2.5	48
25	Relative contribution of free-virus and synaptic transmission to the spread of HIV-1 through target cell populations. <i>Biology Letters</i> , 2013, 9, 20121049.	2.3	48
26	Mathematical modeling of tumorigenesis: mission possible. <i>Current Opinion in Oncology</i> , 2005, 17, 39-43.	2.4	46
27	Population heterogeneity and color stimulus heterogeneity in agent-based color categorization. <i>Journal of Theoretical Biology</i> , 2008, 253, 680-700.	1.7	44
28	Initiation of Colorectal Cancer: Where do the Two Hits Hit?. <i>Cell Cycle</i> , 2004, 3, 1558-1565.	2.6	43
29	Musical trends and predictability of success in contemporary songs in and out of the top charts. <i>Royal Society Open Science</i> , 2018, 5, 171274.	2.4	43
30	Stochastic modeling of cellular colonies with quiescence: An application to drug resistance in cancer. <i>Theoretical Population Biology</i> , 2007, 72, 523-538.	1.1	40
31	Spatial interactions and cooperation can change the speed of evolution of complex phenotypes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 10789-10795.	7.1	39
32	The Role of Symmetric Stem Cell Divisions in Tissue Homeostasis. <i>PLoS Computational Biology</i> , 2015, 11, e1004629.	3.2	39
33	Principles of Regulation of Self-Renewing Cell Lineages. <i>PLoS ONE</i> , 2013, 8, e72847.	2.5	36
34	Latency reversal plus natural killer cells diminish HIV reservoir in vivo. <i>Nature Communications</i> , 2022, 13, 121.	12.8	36
35	Complex role of space in the crossing of fitness valleys by asexual populations. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140014.	3.4	35
36	Selection in spatial stochastic models of cancer: Migration as a key modulator of fitness. <i>Biology Direct</i> , 2010, 5, 21.	4.6	34

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37	Synaptic transmission and the susceptibility of HIV infection to anti-viral drugs. <i>Scientific Reports</i> , 2013, 3, 2103.	3.3	34
38	Stem Cell Control, Oscillations, and Tissue Regeneration in Spatial and Non-Spatial Models. <i>Frontiers in Oncology</i> , 2013, 3, 82.	2.8	32
39	STOCHASTIC MODELING OF LOSS- AND GAIN-OF-FUNCTION MUTATIONS IN CANCER. <i>Mathematical Models and Methods in Applied Sciences</i> , 2007, 17, 1647-1673.	3.3	31
40	Aspirin-Induced Chemoprevention and Response Kinetics Are Enhanced by PIK3CA Mutations in Colorectal Cancer Cells. <i>Cancer Prevention Research</i> , 2017, 10, 208-218.	1.5	31
41	Viral reproductive strategies: How can lytic viruses be evolutionarily competitive?. <i>Journal of Theoretical Biology</i> , 2007, 249, 766-784.	1.7	30
42	Combination Therapies against Chronic Myeloid Leukemia: Short-term versus Long-term Strategies. <i>Cancer Research</i> , 2009, 69, 4904-4910.	0.9	30
43	Minimizing the risk of cancer: tissue architecture and cellular replication limits. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20130410.	3.4	30
44	Evolutionary dynamics of mutator phenotypes in cancer: implications for chemotherapy. <i>Cancer Research</i> , 2003, 63, 6635-42.	0.9	30
45	Epithelial tissue architecture protects against cancer. <i>Mathematical Biosciences</i> , 2006, 200, 90-117.	1.9	29
46	Effect of Synaptic Transmission on Viral Fitness in HIV Infection. <i>PLoS ONE</i> , 2012, 7, e48361.	2.5	29
47	Evolution of genetic instability in heterogeneous tumors. <i>Journal of Theoretical Biology</i> , 2016, 396, 1-12.	1.7	28
48	Cancer, aging and the optimal tissue design. <i>Seminars in Cancer Biology</i> , 2005, 15, 494-505.	9.6	27
49	The fixed-size Luria-Delbrück model with a nonzero death rate. <i>Mathematical Biosciences</i> , 2007, 210, 253-290.	1.9	27
50	Determining the control networks regulating stem cell lineages in colonic crypts. <i>Journal of Theoretical Biology</i> , 2017, 429, 190-203.	1.7	27
51	On the role of endothelial progenitor cells in tumor neovascularization. <i>Journal of Theoretical Biology</i> , 2005, 235, 338-349.	1.7	26
52	Passenger mutations can accelerate tumour suppressor gene inactivation in cancer evolution. <i>Journal of the Royal Society Interface</i> , 2018, 15, 20170967.	3.4	26
53	Dynamics of Cellular Responses to Radiation. <i>PLoS Computational Biology</i> , 2014, 10, e1003513.	3.2	23
54	Eavesdropping and language dynamics. <i>Journal of Theoretical Biology</i> , 2010, 264, 104-118.	1.7	21

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55	The role of cell location and spatial gradients in the evolutionary dynamics of colon and intestinal crypts. <i>Biology Direct</i> , 2016, 11, 42.	4.6	19
56	The effect of spatial randomness on the average fixation time of mutants. <i>PLoS Computational Biology</i> , 2017, 13, e1005864.	3.2	19
57	Selective pressures for and against genetic instability in cancer: a time-dependent problem. <i>Journal of the Royal Society Interface</i> , 2008, 5, 105-121.	3.4	18
58	Cancer-Associated Mutations in Healthy Individuals: Assessing the Risk of Carcinogenesis. <i>Cancer Research</i> , 2014, 74, 1661-1669.	0.9	17
59	Loss- and Gain-of-Function Mutations in Cancer: Mass-action, Spatial and Hierarchical Models. <i>Journal of Statistical Physics</i> , 2007, 128, 413-446.	1.2	16
60	On the Laws of Virus Spread through Cell Populations. <i>Journal of Virology</i> , 2014, 88, 13240-13248.	3.4	16
61	Stability of Control Networks in Autonomous Homeostatic Regulation of Stem Cell Lineages. <i>Bulletin of Mathematical Biology</i> , 2018, 80, 1345-1365.	1.9	16
62	A Quantitative Theory of Human Color Choices. <i>PLoS ONE</i> , 2013, 8, e55986.	2.5	16
63	Regularization of languages by adults and children: A mathematical framework. <i>Cognitive Psychology</i> , 2016, 84, 1-30.	2.2	15
64	Mathematical modeling of cyclic treatments of chronic myeloid leukemia. <i>Mathematical Biosciences and Engineering</i> , 2011, 8, 289-306.	1.9	14
65	Characterizing inhibited tumor growth in stem-cell-driven non-spatial cancers. <i>Mathematical Biosciences</i> , 2015, 270, 135-141.	1.9	13
66	Differences in color categorization manifested by males and females: a quantitative World Color Survey study. <i>Palgrave Communications</i> , 2019, 5, .	4.7	13
67	LANGUAGE, CATEGORIZATION, AND CONVENTION. <i>International Journal of Modeling, Simulation, and Scientific Computing</i> , 2012, 15, 1150022.	1.4	12
68	Accelerated crossing of fitness valleys through division of labor and cheating in asexual populations. <i>Scientific Reports</i> , 2012, 2, 917.	3.3	12
69	Analysis of stochastic stem cell models with control. <i>Mathematical Biosciences</i> , 2015, 266, 93-107.	1.9	12
70	New virus dynamics in the presence of multiple infection. <i>Journal of Theoretical Biology</i> , 2015, 377, 98-109.	1.7	12
71	A comprehensive in vivo and mathematic modeling-based kinetic characterization for aspirin-induced chemoprevention in colorectal cancer. <i>Carcinogenesis</i> , 2020, 41, 751-760.	2.8	12
72	Nonlinear waves in double-stranded DNA. <i>Bulletin of Mathematical Biology</i> , 2005, 67, 701-718.	1.9	11

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73	Determining the role of inflammation in the selection of JAK2 mutant cells in myeloproliferative neoplasms. <i>Journal of Theoretical Biology</i> , 2017, 425, 43-52.	1.7	10
74	Nearest-Neighbor Interactions, Habitat Fragmentation, and the Persistence of Host-Pathogen Systems. <i>American Naturalist</i> , 2013, 182, E94-E111.	2.1	9
75	Quantitative approach for defining basic color terms and color category best exemplars. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2017, 34, 1285.	1.5	9
76	Mutant Evolution in Spatially Structured and Fragmented Expanding Populations. <i>Genetics</i> , 2020, 216, 191-203.	2.9	9
77	Optimizing homeostatic cell renewal in hierarchical tissues. <i>PLoS Computational Biology</i> , 2018, 14, e1005967.	3.2	9
78	Spatial stochastic models of cancer: Fitness, migration, invasion. <i>Mathematical Biosciences and Engineering</i> , 2013, 10, 761-775.	1.9	9
79	Mathematical Modeling of Normal and Cancer Stem Cells. <i>Current Stem Cell Reports</i> , 2017, 3, 232-239.	1.6	8
80	Environmental spatial and temporal variability and its role in non-favoured mutant dynamics. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20180781.	3.4	8
81	Network models and the interpretation of prolonged infection plateaus in the COVID19 pandemic. <i>Epidemics</i> , 2021, 35, 100463.	3.0	8
82	A moving target. <i>Nature</i> , 2015, 525, 198-199.	27.8	7
83	Near Equilibrium Calculus of Stem Cells in Application to the Airway Epithelium Lineage. <i>PLoS Computational Biology</i> , 2016, 12, e1004990.	3.2	7
84	Cooperation-based branching as a mechanism of evolutionary speciation. <i>Journal of Theoretical Biology</i> , 2018, 445, 166-186.	1.7	7
85	The role of telomere shortening in carcinogenesis: A hybrid stochastic-deterministic approach. <i>Journal of Theoretical Biology</i> , 2019, 460, 144-152.	1.7	7
86	Effect of feedback regulation on stem cell fractions in tissues and tumors: Understanding chemoresistance in cancer. <i>Journal of Theoretical Biology</i> , 2021, 509, 110499.	1.7	7
87	Role of high-dose exposure in transmission hot zones as a driver of SARS-CoV-2 dynamics. <i>Journal of the Royal Society Interface</i> , 2021, 18, 20200916.	3.4	7
88	Effect of aspirin on tumour cell colony formation and evolution. <i>Journal of the Royal Society Interface</i> , 2017, 14, 20170374.	3.4	6
89	Effect of cell cycle duration on somatic evolutionary dynamics. <i>Evolutionary Applications</i> , 2017, 10, 1121-1129.	3.1	6
90	Effect of synaptic cell-to-cell transmission and recombination on the evolution of double mutants in HIV. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20190832.	3.4	6

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91	Does cancer solve an optimization problem?. <i>Cell Cycle</i> , 2004, 3, 840-4.	2.6	6
92	Aspirin and the chemoprevention of cancers: A mathematical and evolutionary dynamics perspective. <i>Wiley Interdisciplinary Reviews: Systems Biology and Medicine</i> , 2020, 12, e1487.	6.6	5
93	Quantifying the dynamics of viral recombination during free virus and cell-to-cell transmission in HIV-1 infection. <i>Virus Evolution</i> , 2021, 7, veab026.	4.9	5
94	Quantitative study of color category boundaries. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2018, 35, B165.	1.5	4
95	Beyond the pair approximation: Modeling colonization population dynamics. <i>Physical Review E</i> , 2020, 101, 032404.	2.1	4
96	Mathematical Modeling of Learning from an Inconsistent Source: A Nonlinear Approach. <i>Bulletin of Mathematical Biology</i> , 2017, 79, 635-661.	1.9	3
97	Object-Label-Order Effect When Learning From an Inconsistent Source. <i>Cognitive Science</i> , 2019, 43, e12737.	1.7	3
98	Spatial dynamics of feedback and feedforward regulation in cell lineages. <i>PLoS Computational Biology</i> , 2022, 18, e1010039.	3.2	3
99	Evolutionary dynamics of culturally transmitted, fertility-reducing traits. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2020, 287, 20192468.	2.6	2
100	A hybrid stochastic-deterministic approach to explore multiple infection and evolution in HIV. <i>PLoS Computational Biology</i> , 2021, 17, e1009713.	3.2	2
101	Multi-scale network targeting: A holistic systems-biology approach to cancer treatment. <i>Progress in Biophysics and Molecular Biology</i> , 2021, 165, 72-79.	2.9	1
102	The spread of conventions and the search for the optimal strategy. <i>Religion, Brain and Behavior</i> , 2012, 2, 212-215.	0.7	0
103	Spatial evolution of regularization in learned behavior of animals. <i>Mathematical Biosciences</i> , 2018, 299, 103-116.	1.9	0
104	Mathematical and Systems Medicine Approaches to Resistance Evolution and Prevention in Cancer. , 2021, , 247-260.		0
105	CELLULAR FEEDBACK NETWORKS AND THEIR RESILIENCE AGAINST MUTATIONS. <i>Journal of Biological Systems</i> , 2021, 29, 325-374.	1.4	0
106	Success probability for selectively neutral invading species in the line model with a random fitness landscape. <i>Studies in Applied Mathematics</i> , 2021, 146, 1023-1049.	2.4	0
107	Calculating Stage Duration Statistics in Multistage Diseases. <i>PLoS ONE</i> , 2011, 6, e28298.	2.5	0
108	The benefits of treating undetectable tumors. <i>ELife</i> , 2015, 4, e09713.	6.0	0