Robert A Gatenby

List of Publications by Year
in descending order

132 papers	17,858 citations	41627 51 h-index	19470 122 g-index
142 all docs	142 docs citations	142 times ranked	23423 citing authors

#	Article	IF	Citations
1	Why do cancers have high aerobic glycolysis?. Nature Reviews Cancer, 2004, 4, 891-899.	12.8	4,181
2	Acidity Generated by the Tumor Microenvironment Drives Local Invasion. Cancer Research, 2013, 73, 1524-1535.	0.4	1,036
3	Environment-mediated drug resistance: a major contributor to minimal residual disease. Nature Reviews Cancer, 2009, 9, 665-674.	12.8	740
4	Adaptive Therapy. Cancer Research, 2009, 69, 4894-4903.	0.4	701
5	Acid-Mediated Tumor Invasion: a Multidisciplinary Study. Cancer Research, 2006, 66, 5216-5223.	0.4	674
6	A microenvironmental model of carcinogenesis. Nature Reviews Cancer, 2008, 8, 56-61.	12.8	651
7	Bicarbonate Increases Tumor pH and Inhibits Spontaneous Metastases. Cancer Research, 2009, 69, 2260-2268.	0.4	574
8	Evolutionary dynamics of carcinogenesis and why targeted therapy does not work. Nature Reviews Cancer, 2012, 12, 487-493.	12.8	573
9	Integrating evolutionary dynamics into treatment of metastatic castrate-resistant prostate cancer. Nature Communications, 2017, 8, 1816.	5.8	412
10	Quantitative Imaging in Cancer Evolution and Ecology. Radiology, 2013, 269, 8-14.	3.6	354
11	A change of strategy in the war on cancer. Nature, 2009, 459, 508-509.	13.7	335
12	Classifying the evolutionary and ecological features of neoplasms. Nature Reviews Cancer, 2017, 17, 605-619.	12.8	303
13	Radiomics in Brain Tumor: Image Assessment, Quantitative Feature Descriptors, and Machine-Learning Approaches. American Journal of Neuroradiology, 2018, 39, 208-216.	1.2	281
14	Glycolysis in cancer: A potential target for therapy. International Journal of Biochemistry and Cell Biology, 2007, 39, 1358-1366.	1.2	265
15	Exploiting evolutionary principles to prolong tumor control in preclinical models of breast cancer. Science Translational Medicine, 2016, 8, 327ra24.	5.8	260
16	Impact of Metabolic Heterogeneity on Tumor Growth, Invasion, and Treatment Outcomes. Cancer Research, 2015, 75, 1567-1579.	0.4	256
17	An evolutionary model of carcinogenesis. Cancer Research, 2003, 63, 6212-20.	0.4	218
18	Spatial Heterogeneity and Evolutionary Dynamics Modulate Time to Recurrence in Continuous and Adaptive Cancer Therapies. Cancer Research, 2018, 78, 2127-2139.	0.4	210

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19	The glycolytic phenotype in carcinogenesis and tumor invasion: insights through mathematical models. Cancer Research, 2003, 63, 3847-54.	0.4	210
20	Life history trade-offs in cancer evolution. Nature Reviews Cancer, 2013, 13, 883-892.	12.8	207
21	Quantitative Computed Tomographic Descriptors Associate Tumor Shape Complexity and Intratumor Heterogeneity with Prognosis in Lung Adenocarcinoma. PLoS ONE, 2015, 10, e0118261.	1.1	207
22	Darwinian Dynamics of Intratumoral Heterogeneity: Not Solely Random Mutations but Also Variable Environmental Selection Forces. Cancer Research, 2016, 76, 3136-3144.	0.4	205
23	Mathematical oncology: Cancer summed up. Nature, 2003, 421, 321-321.	13.7	201
24	The Potential Role of Systemic Buffers in Reducing Intratumoral Extracellular pH and Acid-Mediated Invasion. Cancer Research, 2009, 69, 2677-2684.	0.4	183
25	The 2019 mathematical oncology roadmap. Physical Biology, 2019, 16, 041005.	0.8	147
26	A physical sciences network characterization of non-tumorigenic and metastatic cells. Scientific Reports, 2013, 3, 1449.	1.6	146
27	Towards Multidrug Adaptive Therapy. Cancer Research, 2020, 80, 1578-1589.	0.4	142
28	Optimizing Cancer Treatment Using Game Theory. JAMA Oncology, 2019, 5, 96.	3.4	136
29	Exploiting Evolution To Treat Drug Resistance: Combination Therapy and the Double Bind. Molecular Pharmaceutics, 2012, 9, 914-921.	2.3	133
30	Lessons from Applied Ecology: Cancer Control Using an Evolutionary Double Bind. Cancer Research, 2009, 69, 7499-7502.	0.4	132
31	Evolutionary Approaches to Prolong Progression-Free Survival in Breast Cancer. Cancer Research, 2012, 72, 6362-6370.	0.4	130
32	Application of Evolutionary Principles to Cancer Therapy. Cancer Research, 2015, 75, 4675-4680.	0.4	127
33	The Warburg effect as an adaptation of cancer cells to rapid fluctuations in energy demand. PLoS ONE, 2017, 12, e0185085.	1.1	124
34	The Evolution and Ecology of Resistance in Cancer Therapy. Cold Spring Harbor Perspectives in Medicine, 2018, 8, a033415.	2.9	114
35	Integrating evolutionary dynamics into cancer therapy. Nature Reviews Clinical Oncology, 2020, 17, 675-686.	12.5	111
36	Separation of metabolic supply and demand: aerobic glycolysis as a normal physiological response to fluctuating energetic demands in the membrane. Cancer & Metabolism, 2014, 2, 7.	2.4	110

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37	Defining Cancer Subpopulations by Adaptive Strategies Rather Than Molecular Properties Provides Novel Insights into Intratumoral Evolution. Cancer Research, 2017, 77, 2242-2254.	0.4	110
38	Eco-evolutionary causes and consequences of temporal changes in intratumoural blood flow. Nature Reviews Cancer, 2018, 18, 576-585.	12.8	106
39	Of cancer and cave fish. Nature Reviews Cancer, 2011, 11, 237-238.	12.8	93
40	Reduction of metastasis using a non-volatile buffer. Clinical and Experimental Metastasis, 2011, 28, 841-849.	1.7	87
41	Optimal control to develop therapeutic strategies for metastatic castrate resistant prostate cancer. Journal of Theoretical Biology, 2018, 459, 67-78.	0.8	87
42	Acidity promotes tumour progression by altering macrophage phenotype in prostate cancer. British Journal of Cancer, 2019, 121, 556-566.	2.9	86
43	Multidrug Cancer Therapy in Metastatic Castrate-Resistant Prostate Cancer: An Evolution-Based Strategy. Clinical Cancer Research, 2019, 25, 4413-4421.	3.2	85
44	Radiologically Defined Ecological Dynamics and Clinical Outcomes in Glioblastoma Multiforme: Preliminary Results. Translational Oncology, 2014, 7, 5-13.	1.7	82
45	Information Theory in Living Systems, Methods, Applications, and Challenges. Bulletin of Mathematical Biology, 2007, 69, 635-657.	0.9	78
46	The evolutionary dynamics of cancer prevention. Nature Reviews Cancer, 2010, 10, 526-527.	12.8	78
47	The harsh microenvironment in early breast cancer selects for a Warburg phenotype. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	78
48	Characterizing the ecological and evolutionary dynamics of cancer. Nature Genetics, 2020, 52, 759-767.	9.4	77
49	Evolutionary Dynamics in Cancer Therapy. Molecular Pharmaceutics, 2011, 8, 2094-2100.	2.3	73
50	Application of quantitative models from population biology and evolutionary game theory to tumor therapeutic strategies. Molecular Cancer Therapeutics, 2003, 2, 919-27.	1.9	73
51	Turnover Modulates the Need for a Cost of Resistance in Adaptive Therapy. Cancer Research, 2021, 81, 1135-1147.	0.4	71
52	A theoretical quantitative model for evolution of cancer chemotherapy resistance. Biology Direct, 2010, 5, 25.	1.9	69
53	Leveraging transcriptional dynamics to improve BRAF inhibitor responses in melanoma. EBioMedicine, 2019, 48, 178-190.	2.7	66
54	Spatial vs. non-spatial eco-evolutionary dynamics in a tumor growth model. Journal of Theoretical Biology, 2017, 435, 78-97.	0.8	60

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55	The evolutionary ecology of transmissible cancers. Infection, Genetics and Evolution, 2016, 39, 293-303.	1.0	58
56	Identifying key questions in the ecology and evolution of cancer. Evolutionary Applications, 2021, 14, 877-892.	1.5	58
57	Sweat but no gain: Inhibiting proliferation of multidrug resistant cancer cells with â€œersatzdrogesâ€. International Journal of Cancer, 2015, 136, E188-96.	2.3	54
58	Application of information theory and extreme physical information to carcinogenesis. Cancer Research, 2002, 62, 3675-84.	0.4	54
59	Information dynamics in carcinogenesis and tumor growth. Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 2004, 568, 259-273.	0.4	48
60	Macrophage-Derived Cholesterol Contributes to Therapeutic Resistance in Prostate Cancer. Cancer Research, 2021, 81, 5477-5490.	0.4	48
61	EVOLUTIONARY DYNAMICS IN CARCINOGENESIS. Mathematical Models and Methods in Applied Sciences, 2005, 15, 1619-1638.	1.7	46
62	First Strikeâ€“Second Strike Strategies in Metastatic Cancer: Lessons from the Evolutionary Dynamics of Extinction. Cancer Research, 2019, 79, 3174-3177.	0.4	46
63	Mutations, evolution and the central role of a self-defined fitness function in the initiation and progression of cancer. Biochimica Et Biophysica Acta: Reviews on Cancer, 2017, 1867, 162-166.	3.3	43
64	Evolutionary Ecology of Human Papillomavirus: Trade-offs, Coexistence, and Origins of High-Risk and Low-Risk Types. Journal of Infectious Diseases, 2012, 205, 272-279.	1.9	41
65	Information Dynamics in Living Systems: Prokaryotes, Eukaryotes, and Cancer. PLoS ONE, 2011, 6, e22085.	1.1	41
66	Optimal control to reach eco-evolutionary stability in metastatic castrate-resistant prostate cancer. PLoS ONE, 2020, 15, e0243386.	1.1	39
67	The Goldilocks Window of Personalized Chemotherapy: Getting the Immune Response Just Right. Cancer Research, 2019, 79, 5302-5315.	0.4	38
68	Eradicating Metastatic Cancer and the Eco-Evolutionary Dynamics of Anthropocene Extinctions. Cancer Research, 2020, 80, 613-623.	0.4	37
69	Evolution-based mathematical models significantly prolong response to abiraterone in metastatic castrate-resistant prostate cancer and identify strategies to further improve outcomes. ELife, 0, 11, .	2.8	36
70	Control vs. eradication: Applying infectious disease treatment strategies to cancer. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 937-938.	3.3	35
71	Transmissible Cancers in an Evolutionary Perspective. IScience, 2020, 23, 101269.	1.9	33
72	Adaptation to Stochastic Temporal Variations in Intratumoral Blood Flow: The Warburg Effect as a Bet Hedging Strategy. Bulletin of Mathematical Biology, 2018, 80, 954-970.	0.9	30

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73	The Evolution and Ecology of Resistance in Cancer Therapy. Cold Spring Harbor Perspectives in Medicine, 2020, 10, a040972.	2.9	30
74	Evolutionary perspective of cancer: myth, metaphors, and reality. Evolutionary Applications, 2015, 8, 541-544.	1.5	29
75	An evolutionary framework for treating pediatric sarcomas. Cancer, 2020, 126, 2577-2587.	2.0	29
76	The Role of Cell Membrane Information Reception, Processing, and Communication in the Structure and Function of Multicellular Tissue. International Journal of Molecular Sciences, 2019, 20, 3609.	1.8	28
77	Is There One Key Step in the Metastatic Cascade?. Cancers, 2021, 13, 3693.	1.7	26
78	Evolutionary dynamics of competing phenotype-structured populations in periodically fluctuating environments. Journal of Mathematical Biology, 2020, 80, 775-807.	0.8	24
79	Aggregation Effects and Population-Based Dynamics as a Source of Therapy Resistance in Cancer. IEEE Transactions on Biomedical Engineering, 2017, 64, 512-518.	2.5	23
80	Is adaptive therapy natural?. PLoS Biology, 2018, 16, e2007066.	2.6	23
81	The Critical Roles of Information and Nonequilibrium Thermodynamics in Evolution of Living Systems. Bulletin of Mathematical Biology, 2013, 75, 589-601.	0.9	22
82	The Physics of Cancer. Cancer Research, 2019, 79, 2107-2110.	0.4	22
83	Ion-Based Cellular Signal Transmission, Principles of Minimum Information Loss, and Evolution by Natural Selection. International Journal of Molecular Sciences, 2020, 21, 9.	1.8	22
84	The multiple facets of Peto's paradox: a life-history model for the evolution of cancer suppression. Philosophical Transactions of the Royal Society B: Biological Sciences, 2015, 370, 20140221.	1.8	21
85	Is the Genetic Paradigm of Cancer Complete?. Radiology, 2017, 284, 1-3.	3.6	21
86	Transmissible Cancer: The Evolution of Interindividual Metastasis. , 2017, , 167-179.		21
87	Frequency-dependent interactions determine outcome of competition between two breast cancer cell lines. Scientific Reports, 2021, 11, 4908.	1.6	21
88	Divergent and convergent evolution in metastases suggest treatment strategies based on specific metastatic sites. Evolution, Medicine and Public Health, 2015, 2015, 76-87.	1.1	20
89	Transmissible cancers, are they more common than thought?. Evolutionary Applications, 2016, 9, 633-634.	1.5	20
90	Sex-specific impact of patterns of imageable tumor growth on survival of primary glioblastoma patients. BMC Cancer, 2020, 20, 447.	1.1	20

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91	A Mathematical Dissection of the Adaptation of Cell Populations to Fluctuating Oxygen Levels. Bulletin of Mathematical Biology, 2020, 82, 81.	0.9	20
92	Coulomb Interactions between Cytoplasmic Electric Fields and Phosphorylated Messenger Proteins Optimize Information Flow in Cells. PLoS ONE, 2010, 5, e12084.	1.1	20
93	Mathematical Models of Tumour Invasion Mediated by Transformation-Induced Alteration of Microenvironmental pH. Novartis Foundation Symposium, 2008, 240, 85-99.	1.2	19
94	CellularÂinformation dynamics through transmembrane flow of ions. Scientific Reports, 2017, 7, 15075.	1.6	19
95	Group phenotypic composition in cancer. ELife, 2021, 10, .	2.8	18
96	Inducing catastrophe in malignant growth. Mathematical Medicine and Biology, 2008, 25, 267-283.	0.8	17
97	Predator-Prey in Tumor-Immune Interactions: A Wrong Model or Just an Incomplete One?. Frontiers in Immunology, 2021, 12, 668221.	2.2	17
98	The Role of Non-Genomic Information in Maintaining Thermodynamic Stability in Living Systems. Mathematical Biosciences and Engineering, 2005, 2, 43-51.	1.0	17
99	Cytoplasmic convection currents and intracellular temperature gradients. PLoS Computational Biology, 2019, 15, e1007372.	1.5	16
100	Evolutionary Strategy for Systemic Therapy of Metastatic Breast Cancer: Balancing Response with Suppression of Resistance. Women's Health, 2014, 10, 423-430.	0.7	15
101	Cancer Foraging Ecology: Diet Choice, Patch Use, and Habitat Selection of Cancer Cells. Current Pathobiology Reports, 2018, 6, 209-218.	1.6	15
102	Synthetic minority image over-sampling technique: How to improve AUC for glioblastoma patient survival prediction. , 2017, , .		14
103	Integrating evolutionary dynamics into treatment of metastatic castrate-resistant prostate cancer (mCRPC): Updated analysis of the adaptive abiraterone (abi) study (NCT02415621).. Journal of Clinical Oncology, 2019, 37, 5041-5041.	0.8	14
104	Coordination games in cancer. PLoS ONE, 2022, 17, e0261578.	1.1	14
105	Commentary: Carcinogenesis as Darwinian evolution? Do the math!. International Journal of Epidemiology, 2006, 35, 1165-1167.	0.9	12
106	Searching for Goldilocks: How Evolution and Ecology Can Help Uncover More Effective Patient-Specific Chemotherapies. Cancer Research, 2020, 80, 5147-5154.	0.4	11
107	Comparative study between discrete and continuum models for the evolution of competing phenotype-structured cell populations in dynamical environments. Physical Review E, 2020, 102, 042404.	0.8	11
108	Investigating Information Dynamics in Living Systems through the Structure and Function of Enzymes. PLoS ONE, 2016, 11, e0154867.	1.1	11

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109	Coevolution of Tumor Cells and Their Microenvironment: â€œNiche Construction in Cancerâ€ , 2017, , 111-117.		10
110	GLUT1 production in cancer cells: a tragedy of the commons. Npj Systems Biology and Applications, 2022, 8, .	1.4	10
111	Subcellular and in-vivo Nano-Endoscopy. Scientific Reports, 2016, 6, 34400.	1.6	9
112	Superlinear growth reveals the Allee effect in tumors. Physical Review E, 2021, 103, 042405.	0.8	8
113	Integrating genetic and nongenetic drivers of somatic evolution during carcinogenesis: The biplane model. Evolutionary Applications, 2020, 13, 1651-1659.	1.5	7
114	Novel evolutionary dynamics of small populations in breast cancer adjuvant and neoadjuvant therapy. Npj Breast Cancer, 2021, 7, 26.	2.3	7
115	Some Mathematical Modelling Challenges and Approaches in Cancer. , 2006, , 95-107.		6
116	Artificial selection for host resistance to tumour growth and subsequent cancer cell adaptations: an evolutionary arms race. British Journal of Cancer, 2021, 124, 455-465.	2.9	6
117	MODELING CANCER AS AN EVOLUTIONARY GAME. International Game Theory Review, 2005, 07, 331-346.	0.3	5
118	High School Internship Program in Integrated Mathematical Oncology (HIP IMO): Five-Year Experience at Moffitt Cancer Center. Bulletin of Mathematical Biology, 2020, 82, 91.	0.9	4
119	Radiologic Pearls for Internists: A Case-Based Review. American Journal of Medicine, 2018, 131, 9-16.	0.6	3
120	Illuminating the Numbers: Integrating Mathematical Models to Optimize Photomedicine Dosimetry and Combination Therapies. Frontiers in Physics, 2019, 7, .	1.0	3
121	Special Collection on Ecological and Evolutionary Approaches to Cancer Control: Cancer Finds a Conceptual Home. Cancer Control, 2020, 27, 107327482094235.	0.7	2
122	Insights From the Ecology of Information to Cancer Control. Cancer Control, 2020, 27, 107327482094598.	0.7	2
123	Treatment-induced evolutionary dynamics in nonmetastatic locally advanced rectal adenocarcinoma. Advances in Cancer Research, 2021, 151, 39-67.	1.9	2
124	Economic benefits of adaptive abiraterone therapy for advanced prostate cancer.. Journal of Clinical Oncology, 2019, 37, e18343-e18343.	0.8	2
125	La thÃ©orie de lâ€™Ã©volution, nouvelle arme contre le cancer. Pourlascience Fr, 2019, NÂº 505 - novembre, 26-32.	0.0	2
126	Ecoevolutionary biology of pancreatic ductal adenocarcinoma. Pancreatology, 2022, , .	0.5	2

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127	Cancer treatment innovators discover Charles Darwin. Evolution, Medicine and Public Health, 2019, 2019, 108-110.	1.1	1
128	Evolutionary strategies to overcome cancer cell resistance to treatment. , 2020, , 691-703.		1
129	A Multidisciplinary Model Predicts Clinical Response in Relapsed Multiple Myeloma. Blood, 2015, 126, 501-501.	0.6	1
130	SOMATIC EVOLUTION OF CANCER. International Game Theory Review, 2008, 10, 101-118.	0.3	0
131	a Combination of Ex Vivo and Computational Models Predicts Clinical Response in MM Treatment Combinations of Proteasome Inhibitors, Imids, Nuclear Export Inhibitors and Alkylating Agents. Blood, 2016, 128, 3291-3291.	0.6	0
132	Innovations in Diagnostic Imaging and the Transformation of the Clinical Practice of Radiology in Collaborative, Multidisciplinary Cancer Care. Cancer Control, 2017, 24, 115-117.	0.7	0