

# Martin A Nowak

## List of Publications by Year in descending order

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225  
papers

56,725  
citations

3726

89  
h-index

1459

220  
g-index

244  
all docs

244  
docs citations

244  
times ranked

34268  
citing authors

#	ARTICLE	IF	CITATIONS
1	Five Rules for the Evolution of Cooperation. Science, 2006, 314, 1560-1563.	6.0	4,472
2	Evolutionary games and spatial chaos. Nature, 1992, 359, 826-829.	13.7	3,483
3	Viral dynamics in human immunodeficiency virus type 1 infection. Nature, 1995, 373, 117-122.	13.7	3,369
4	Evolution of indirect reciprocity. Nature, 2005, 437, 1291-1298.	13.7	2,220
5	Distant metastasis occurs late during the genetic evolution of pancreatic cancer. Nature, 2010, 467, 1114-1117.	13.7	2,184
6	Evolution of indirect reciprocity by image scoring. Nature, 1998, 393, 573-577.	13.7	2,098
7	A simple rule for the evolution of cooperation on graphs and social networks. Nature, 2006, 441, 502-505.	13.7	1,763
8	A strategy of win-stay, lose-shift that outperforms tit-for-tat in the Prisoner's Dilemma game. Nature, 1993, 364, 56-58.	13.7	1,593
9	The molecular evolution of acquired resistance to targeted EGFR blockade in colorectal cancers. Nature, 2012, 486, 537-540.	13.7	1,506
10	Emergence of cooperation and evolutionary stability in finite populations. Nature, 2004, 428, 646-650.	13.7	1,134
11	Late escape from an immunodominant cytotoxic T-lymphocyte response associated with progression to AIDS. Nature Medicine, 1997, 3, 212-217.	15.2	1,096
12	The evolution of eusociality. Nature, 2010, 466, 1057-1062.	13.7	1,083
13	Evolutionary dynamics on graphs. Nature, 2005, 433, 312-316.	13.7	1,044
14	Human cooperation. Trends in Cognitive Sciences, 2013, 17, 413-425.	4.0	994
15	Evolutionary Dynamics of Biological Games. Science, 2004, 303, 793-799.	6.0	912
16	Tit for tat in heterogeneous populations. Nature, 1992, 355, 250-253.	13.7	908
17	Mutations driving CLL and their evolution in progression and relapse. Nature, 2015, 526, 525-530.	13.7	868
18	Accumulation of driver and passenger mutations during tumor progression. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 18545-18550.	3.3	742

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19	Evolution of cooperation by multilevel selection. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 10952-10955.	3.3	735
20	Comparative lesion sequencing provides insights into tumor evolution. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 4283-4288.	3.3	720
21	Evolution of genetic redundancy. Nature, 1997, 388, 167-171.	13.7	660
22	Winners don't punish. Nature, 2008, 452, 348-351.	13.7	653
23	Via Freedom to Coercion: The Emergence of Costly Punishment. Science, 2007, 316, 1905-1907.	6.0	628
24	THE SPATIAL DILEMMAS OF EVOLUTION. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1993, 03, 35-78.	0.7	573
25	Evolutionary dynamics of cancer in response to targeted combination therapy. ELife, 2013, 2, e00747.	2.8	516
26	Social heuristics shape intuitive cooperation. Nature Communications, 2014, 5, 3677.	5.8	510
27	HIV-1 Vpr increases viral expression by manipulation of the cell cycle: A mechanism for selection of Vpr in vivo. Nature Medicine, 1998, 4, 65-71.	15.2	489
28	The Dynamics of Indirect Reciprocity. Journal of Theoretical Biology, 1998, 194, 561-574.	0.8	458
29	A spatial model predicts that dispersal and cell turnover limit intratumour heterogeneity. Nature, 2015, 525, 261-264.	13.7	442
30	Stochastic dynamics of invasion and fixation. Physical Review E, 2006, 74, 011909.	0.8	431
31	Evolutionary dynamics in structured populations. Philosophical Transactions of the Royal Society B: Biological Sciences, 2010, 365, 19-30.	1.8	392
32	Computational and evolutionary aspects of language. Nature, 2002, 417, 611-617.	13.7	375
33	Origins of lymphatic and distant metastases in human colorectal cancer. Science, 2017, 357, 55-60.	6.0	358
34	Evolutionary game dynamics in finite populations. Bulletin of Mathematical Biology, 2004, 66, 1621-1644.	0.9	349
35	Antigenic oscillations and shifting immunodominance in HIV-1 infections. Nature, 1995, 375, 606-611.	13.7	342
36	Humans display a "cooperative phenotype" that is domain general and temporally stable. Nature Communications, 2014, 5, 4939.	5.8	327

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37	Only three driver gene mutations are required for the development of lung and colorectal cancers. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 118-123.	3.3	325
38	Evolutionary dynamics on any population structure. Nature, 2017, 544, 227-230.	13.7	324
39	Cooperating with the future. Nature, 2014, 511, 220-223.	13.7	319
40	Limited heterogeneity of known driver gene mutations among the metastases of individual patients with pancreatic cancer. Nature Genetics, 2017, 49, 358-366.	9.4	316
41	Pairwise comparison and selection temperature in evolutionary game dynamics. Journal of Theoretical Biology, 2007, 246, 522-529.	0.8	300
42	From The Cover: Evolutionary cycles of cooperation and defection. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 10797-10800.	3.3	299
43	Clonal evolution in patients with chronic lymphocytic leukaemia developing resistance to BTK inhibition. Nature Communications, 2016, 7, 11589.	5.8	285
44	MORE SPATIAL GAMES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1994, 04, 33-56.	0.7	249
45	Upstream reciprocity and the evolution of gratitude. Proceedings of the Royal Society B: Biological Sciences, 2007, 274, 605-610.	1.2	236
46	Breaking the Symmetry between Interaction and Replacement in Evolutionary Dynamics on Graphs. Physical Review Letters, 2007, 98, 108106.	2.9	235
47	The evolution of stochastic strategies in the Prisoner's Dilemma. Acta Applicandae Mathematicae, 1990, 20, 247-265.	0.5	232
48	Evolution of extortion in Iterated Prisoner's Dilemma games. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6913-6918.	3.3	224
49	Minimal functional driver gene heterogeneity among untreated metastases. Science, 2018, 361, 1033-1037.	6.0	223
50	Evolutionary dynamics in set structured populations. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 8601-8604.	3.3	222
51	Strategy selection in structured populations. Journal of Theoretical Biology, 2009, 259, 570-581.	0.8	217
52	Static network structure can stabilize human cooperation. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17093-17098.	3.3	215
53	THE EVOLUTION OF VIRULENCE IN PATHOGENS WITH VERTICAL AND HORIZONTAL TRANSMISSION. Evolution; International Journal of Organic Evolution, 1996, 50, 1729-1741.	1.1	210
54	The linear process of somatic evolution. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 14966-14969.	3.3	205

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55	Powering up with indirect reciprocity in a large-scale field experiment. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 10424-10429.	3.3	204
56	Evolutionary games on cycles. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2006, 273, 2249-2256.	1.2	195
57	Evolving cooperation. <i>Journal of Theoretical Biology</i> , 2012, 299, 1-8.	0.8	195
58	Evolution of fairness in the one-shot anonymous Ultimatum Game. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 2581-2586.	3.3	186
59	The timetable of evolution. <i>Science Advances</i> , 2017, 3, e1603076.	4.7	186
60	Development of an oral once-weekly drug delivery system for HIV antiretroviral therapy. <i>Nature Communications</i> , 2018, 9, 2.	5.8	180
61	Direct reciprocity in structured populations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 9929-9934.	3.3	179
62	The Alternating Prisoner's Dilemma. <i>Journal of Theoretical Biology</i> , 1994, 168, 219-226.	0.8	175
63	Evolutionary dynamics of CRISPR gene drives. <i>Science Advances</i> , 2017, 3, e1601964.	4.7	172
64	Causes of HIV diversity. <i>Nature</i> , 1995, 376, 125-125.	13.7	164
65	Evolutionary graph theory: Breaking the symmetry between interaction and replacement. <i>Journal of Theoretical Biology</i> , 2007, 246, 681-694.	0.8	162
66	Antiretroviral dynamics determines HIV evolution and predicts therapy outcome. <i>Nature Medicine</i> , 2012, 18, 1378-1385.	15.2	159
67	Evolution of cooperation in stochastic games. <i>Nature</i> , 2018, 559, 246-249.	13.7	159
68	Daisy-chain gene drives for the alteration of local populations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 8275-8282.	3.3	154
69	Increased stem cell proliferation in atherosclerosis accelerates clonal hematopoiesis. <i>Cell</i> , 2021, 184, 1348-1361.e22.	13.5	149
70	Tit-for-tat or win-stay, lose-shift?. <i>Journal of Theoretical Biology</i> , 2007, 247, 574-580.	0.8	147
71	Imperfect drug penetration leads to spatial monotherapy and rapid evolution of multidrug resistance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E2874-83.	3.3	142
72	Analytical Results for Individual and Group Selection of Any Intensity. <i>Bulletin of Mathematical Biology</i> , 2008, 70, 1410-1424.	0.9	141

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73	An analysis of genetic heterogeneity in untreated cancers. <i>Nature Reviews Cancer</i> , 2019, 19, 639-650.	12.8	139
74	The Evolutionary Dynamics of Grammar Acquisition. <i>Journal of Theoretical Biology</i> , 2001, 209, 43-59.	0.8	137
75	Cooperation and control in multiplayer social dilemmas. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 16425-16430.	3.3	136
76	Evolutionary game dynamics in finite populations with strong selection and weak mutation. <i>Theoretical Population Biology</i> , 2006, 70, 352-363.	0.5	134
77	Uncalculating cooperation is used to signal trustworthiness. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 8658-8663.	3.3	133
78	Current CRISPR gene drive systems are likely to be highly invasive in wild populations. <i>ELife</i> , 2018, 7, .	2.8	133
79	Games on graphs. <i>EMS Surveys in Mathematical Sciences</i> , 2014, 1, 113-151.	1.5	126
80	Cooperate without looking: Why we care what people think and not just what they do. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 1727-1732.	3.3	126
81	Oscillations in the evolution of reciprocity. <i>Journal of Theoretical Biology</i> , 1989, 137, 21-26.	0.8	123
82	Spatial dilemmas of diffusible public goods. <i>ELife</i> , 2013, 2, e01169.	2.8	119
83	Reconstructing metastatic seeding patterns of human cancers. <i>Nature Communications</i> , 2017, 8, 14114.	5.8	118
84	The Continuous Prisoner's Dilemma: I. Linear Reactive Strategies. <i>Journal of Theoretical Biology</i> , 1999, 200, 307-321.	0.8	110
85	Evolutionary construction by staying together and coming together. <i>Journal of Theoretical Biology</i> , 2013, 320, 10-22.	0.8	106
86	Co-evolution of human immunodeficiency virus and cytotoxic T-lymphocyte responses. <i>Immunological Reviews</i> , 1997, 159, 17-29.	2.8	103
87	Evolution and emergence of infectious diseases in theoretical and real-world networks. <i>Nature Communications</i> , 2015, 6, 6101.	5.8	102
88	Partners and rivals in direct reciprocity. <i>Nature Human Behaviour</i> , 2018, 2, 469-477.	6.2	101
89	Limitations of inclusive fitness. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 20135-20139.	3.3	100
90	Timing and heterogeneity of mutations associated with drug resistance in metastatic cancers. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 15964-15968.	3.3	100

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91	Spatial Heterogeneity in Drug Concentrations Can Facilitate the Emergence of Resistance to Cancer Therapy. <i>PLoS Computational Biology</i> , 2015, 11, e1004142.	1.5	100
92	Social dilemmas among unequals. <i>Nature</i> , 2019, 572, 524-527.	13.7	99
93	Vertical suppression of the EGFR pathway prevents onset of resistance in colorectal cancers. <i>Nature Communications</i> , 2015, 6, 8305.	5.8	97
94	Precancerous neoplastic cells can move through the pancreatic ductal system. <i>Nature</i> , 2018, 561, 201-205.	13.7	96
95	Quantifying Clonal and Subclonal Passenger Mutations in Cancer Evolution. <i>PLoS Computational Biology</i> , 2016, 12, e1004731.	1.5	95
96	Evolutionary dynamics of tumor suppressor gene inactivation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 10635-10638.	3.3	94
97	Memory- <i>n</i> strategies of direct reciprocity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 4715-4720.	3.3	92
98	Evolutionary dynamics on graphs: Efficient method for weak selection. <i>Physical Review E</i> , 2009, 79, 046707.	0.8	89
99	Indirect reciprocity with private, noisy, and incomplete information. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 12241-12246.	3.3	89
100	Prevolutionary dynamics and the origin of evolution. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 14924-14927.	3.3	86
101	Growth dynamics in naturally progressing chronic lymphocytic leukaemia. <i>Nature</i> , 2019, 570, 474-479.	13.7	86
102	Adaptive Dynamics of Extortion and Compliance. <i>PLoS ONE</i> , 2013, 8, e77886.	1.1	81
103	Effect of Immune Activation on the Dynamics of Human Immunodeficiency Virus Replication and on the Distribution of Viral Quasispecies. <i>Journal of Virology</i> , 1998, 72, 7772-7784.	1.5	81
104	Stochastic evolutionary dynamics of direct reciprocity. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2010, 277, 463-468.	1.2	79
105	Evolutionary dynamics with game transitions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 25398-25404.	3.3	78
106	How mutation affects evolutionary games on graphs. <i>Journal of Theoretical Biology</i> , 2012, 299, 97-105.	0.8	74
107	Evolution of cooperation on large networks with community structure. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20180677.	1.5	73
108	The Evolutionary Origins of Recurrent Pancreatic Cancer. <i>Cancer Discovery</i> , 2020, 10, 792-805.	7.7	71

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109	HIV mutation rate. <i>Nature</i> , 1990, 347, 522-522.	13.7	70
110	Nowak et al. reply. <i>Nature</i> , 2011, 471, E9-E10.	13.7	70
111	Evolutionary performance of zero-determinant strategies in multiplayer games. <i>Journal of Theoretical Biology</i> , 2015, 374, 115-124.	0.8	67
112	Evolution of delayed resistance to immunotherapy in a melanoma responder. <i>Nature Medicine</i> , 2021, 27, 985-992.	15.2	67
113	Direct reciprocity on graphs. <i>Journal of Theoretical Biology</i> , 2007, 247, 462-470.	0.8	66
114	Public Goods With Punishment and Abstaining in Finite and Infinite Populations. <i>Biological Theory</i> , 2008, 3, 114-122.	0.8	63
115	Spatiotemporal regulation of clonogenicity in colorectal cancer xenografts. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 6140-6145.	3.3	60
116	A rigorous measure of genome-wide genetic shuffling that takes into account crossover positions and Mendel's second law. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 1659-1668.	3.3	58
117	Stochastic dynamics of metastasis formation. <i>Journal of Theoretical Biology</i> , 2006, 240, 521-530.	0.8	57
118	Global Migration Can Lead to Stronger Spatial Selection than Local Migration. <i>Journal of Statistical Physics</i> , 2013, 151, 637-653.	0.5	51
119	Punishment does not promote cooperation under exploration dynamics when anti-social punishment is possible. <i>Journal of Theoretical Biology</i> , 2014, 360, 163-171.	0.8	51
120	Insight into treatment of HIV infection from viral dynamics models. <i>Immunological Reviews</i> , 2018, 285, 9-25.	2.8	51
121	Reputation Effects in Public and Private Interactions. <i>PLoS Computational Biology</i> , 2015, 11, e1004527.	1.5	51
122	HIV results in the frame. <i>Nature</i> , 1995, 375, 193-193.	13.7	50
123	Social goods dilemmas in heterogeneous societies. <i>Nature Human Behaviour</i> , 2020, 4, 819-831.	6.2	49
124	Transitions in social complexity along elevational gradients reveal a combined impact of season length and development time on social evolution. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2014, 281, 20140627.	1.2	47
125	A unified framework of direct and indirect reciprocity. <i>Nature Human Behaviour</i> , 2021, 5, 1292-1302.	6.2	47
126	Genes, environment, and bad luck. <i>Science</i> , 2017, 355, 1266-1267.	6.0	46



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127	Genetic control and dynamics of the cellular immune response to the human Tâ€“cell leukaemia virus, HTLVâ€“I. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 1999, 354, 691-700.	1.8	45
128	Resisting Resistance. <i>Annual Review of Cancer Biology</i> , 2017, 1, 203-221.	2.3	45
129	From Preamble to Life: How Chemical Kinetics Become Evolutionary Dynamics. <i>Accounts of Chemical Research</i> , 2012, 45, 2088-2096.	7.6	43
130	Indirect reciprocity with optional interactions. <i>Journal of Theoretical Biology</i> , 2015, 365, 1-11.	0.8	43
131	Population structure determines the tradeoff between fixation probability and fixation time. <i>Communications Biology</i> , 2019, 2, 138.	2.0	43
132	Extended flowering intervals of bamboos evolved by discrete multiplication. <i>Ecology Letters</i> , 2015, 18, 653-659.	3.0	42
133	Computational complexity of ecological and evolutionary spatial dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 15636-15641.	3.3	42
134	Think global, act local: Preserving the global commons. <i>Scientific Reports</i> , 2016, 6, 36079.	1.6	42
135	Comparing reactive and memory-one strategies of direct reciprocity. <i>Scientific Reports</i> , 2016, 6, 25676.	1.6	42
136	Limits on amplifiers of natural selection under death-Birth updating. <i>PLoS Computational Biology</i> , 2020, 16, e1007494.	1.5	42
137	Games among relatives revisited. <i>Journal of Theoretical Biology</i> , 2015, 378, 103-116.	0.8	41
138	The general form of Hamiltonâ€™s rule makes no predictions and cannot be tested empirically. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 5665-5670.	3.3	40
139	Drift-Induced Selection Between Male and Female Heterogamety. <i>Genetics</i> , 2017, 207, 711-727.	1.2	40
140	Construction of arbitrarily strong amplifiers of natural selection using evolutionary graph theory. <i>Communications Biology</i> , 2018, 1, 71.	2.0	40
141	Consecutive seeding and transfer of genetic diversity in metastasis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 14129-14137.	3.3	39
142	The Molecular Clock of Neutral Evolution Can Be Accelerated or Slowed by Asymmetric Spatial Structure. <i>PLoS Computational Biology</i> , 2015, 11, e1004108.	1.5	38
143	Tumour and immune cell dynamics explain the PSA bounce after prostate cancer brachytherapy. <i>British Journal of Cancer</i> , 2016, 115, 195-202.	2.9	35
144	Natural selection drives the evolution of ant life cycles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 12585-12590.	3.3	34

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145	The Trivers-Willard hypothesis: sex ratio or investment?. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2016, 283, 20160126.	1.2	34
146	Amplification on Undirected Population Structures: Comets Beat Stars. <i>Scientific Reports</i> , 2017, 7, 82.	1.6	34
147	The effect of one additional driver mutation on tumor progression. <i>Evolutionary Applications</i> , 2013, 6, 34-45.	1.5	33
148	Religious motivations for cooperation: an experimental investigation using explicit primes. <i>Religion, Brain and Behavior</i> , 2014, 4, 31-48.	0.4	33
149	Crosstalk in concurrent repeated games impedes direct reciprocity and requires stronger levels of forgiveness. <i>Nature Communications</i> , 2018, 9, 555.	5.8	33
150	Conjoining uncooperative societies facilitates evolution of cooperation. <i>Nature Human Behaviour</i> , 2018, 2, 492-499.	6.2	33
151	Evolving cooperation in multichannel games. <i>Nature Communications</i> , 2020, 11, 3885.	5.8	33
152	Universality of fixation probabilities in randomly structured populations. <i>Scientific Reports</i> , 2014, 4, 6692.	1.6	32
153	Equal Pay for All Prisoners. <i>American Mathematical Monthly</i> , 1997, 104, 303-305.	0.2	31
154	Optional games on cycles and complete graphs. <i>Journal of Theoretical Biology</i> , 2014, 356, 98-112.	0.8	31
155	Dynamics of prebiotic RNA reproduction illuminated by chemical game theory. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 5030-5035.	3.3	31
156	Public goods games in populations with fluctuating size. <i>Theoretical Population Biology</i> , 2018, 121, 72-84.	0.5	31
157	Evolutionary games on isothermal graphs. <i>Nature Communications</i> , 2019, 10, 5107.	5.8	30
158	Prediction of future BSE spread. <i>Nature</i> , 1996, 381, 119-119.	13.7	29
159	Phenotypic Heterogeneity and the Evolution of Bacterial Life Cycles. <i>PLoS Computational Biology</i> , 2016, 12, e1004764.	1.5	29
160	Genetic instability and clonal expansion. <i>Journal of Theoretical Biology</i> , 2006, 241, 26-32.	0.8	28
161	Selection for Replicases in Protocells. <i>PLoS Computational Biology</i> , 2013, 9, e1003051.	1.5	27
162	Evolution of resistance to COVID-19 vaccination with dynamic social distancing. <i>Nature Human Behaviour</i> , 2022, 6, 193-206.	6.2	27

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163	Rand et al. reply. Nature, 2013, 498, E2-E3.	13.7	26
164	Four classes of interactions for evolutionary games. Physical Review E, 2015, 92, 022820.	0.8	26
165	HOST POPULATION STRUCTURE AND THE EVOLUTION OF VIRULENCE: A "LAW OF DIMINISHING RETURNS" Evolution; International Journal of Organic Evolution, 1995, 49, 743-748.	1.1	25
166	Language Dynamics in Finite Populations. Journal of Theoretical Biology, 2003, 221, 445-457.	0.8	25
167	Forgiver Triumphs in Alternating Prisoner's Dilemma. PLoS ONE, 2013, 8, e80814.	1.1	25
168	The Time Scale of Evolutionary Innovation. PLoS Computational Biology, 2014, 10, e1003818.	1.5	25
169	Robustness of cooperation. Nature, 1996, 379, 126-126.	13.7	24
170	An experimental investigation of evolutionary dynamics in the Rock-Paper-Scissors game. Scientific Reports, 2015, 5, 8817.	1.6	24
171	Indirect Reciprocity with Optional Interactions and Private Information. Games, 2015, 6, 438-457.	0.4	24
172	Inclusive Fitness Theorizing Invokes Phenomena That Are Not Relevant for the Evolution of Eusociality. PLoS Biology, 2015, 13, e1002134.	2.6	24
173	Fast and strong amplifiers of natural selection. Nature Communications, 2021, 12, 4009.	5.8	24
174	The Great Oxygenation Event as a consequence of ecological dynamics modulated by planetary change. Nature Communications, 2021, 12, 3985.	5.8	24
175	Heterogeneity in background fitness acts as a suppressor of selection. Journal of Theoretical Biology, 2014, 343, 178-185.	0.8	23
176	Cooperative adaptation to therapy (CAT) confers resistance in heterogeneous non-small cell lung cancer. PLoS Computational Biology, 2019, 15, e1007278.	1.5	23
177	An evolutionary explanation for ineffective altruism. Nature Human Behaviour, 2020, 4, 1245-1257.	6.2	23
178	Life cycle synchronization is a viral drug resistance mechanism. PLoS Computational Biology, 2018, 14, e1005947.	1.5	22
179	The Red Queen and King in finite populations. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5396-E5405.	3.3	21
180	The signal-burying game can explain why we obscure positive traits and good deeds. Nature Human Behaviour, 2018, 2, 397-404.	6.2	21

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181	The evolution of non-reproductive workers in insect colonies with haplodiploid genetics. <i>ELife</i> , 2015, 4, e08918.	2.8	21
182	Evolution of worker policing. <i>Journal of Theoretical Biology</i> , 2016, 399, 103-116.	0.8	19
183	Population structure across scales facilitates coexistence and spatial heterogeneity of antibiotic-resistant infections. <i>PLoS Computational Biology</i> , 2020, 16, e1008010.	1.5	19
184	Equal Pay for All Prisoners. <i>American Mathematical Monthly</i> , 1997, 104, 303.	0.2	18
185	Fourier decomposition of payoff matrix for symmetric three-strategy games. <i>Physical Review E</i> , 2014, 90, 042811.	0.8	18
186	Games of multicellularity. <i>Journal of Theoretical Biology</i> , 2016, 403, 143-158.	0.8	18
187	Fixation Probabilities for Any Configuration of Two Strategies on Regular Graphs. <i>Scientific Reports</i> , 2016, 6, 39181.	1.6	18
188	Evolutionary dynamics of infectious diseases in finite populations. <i>Journal of Theoretical Biology</i> , 2014, 360, 149-162.	0.8	17
189	Computer simulations of cellular group selection reveal mechanism for sustaining cooperation. <i>Journal of Theoretical Biology</i> , 2014, 357, 123-133.	0.8	17
190	Payoff components and their effects in a spatial three-strategy evolutionary social dilemma. <i>Physical Review E</i> , 2015, 92, 012813.	0.8	13
191	Cooperation in alternating interactions with memory constraints. <i>Nature Communications</i> , 2022, 13, 737.	5.8	13
192	Evolution of staying together in the context of diffusible public goods. <i>Journal of Theoretical Biology</i> , 2014, 360, 1-12.	0.8	12
193	Virus load and antigenic diversity. <i>Bulletin of Mathematical Biology</i> , 1997, 59, 881-896.	0.9	11
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