Susanna C Manrubia

List of Publications by Year
in descending order

122 papers	4,636 citations	37 h-index	61 g-index
132 all docs	132 docs citations	132 times ranked	3542 citing authors

94433

123424

#	Article	IF	Citations
1	Suppression of viral infectivity through lethal defection. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 4448-4452.	7.1	170
2	Criticality and scaling in evolutionary ecology. Trends in Ecology and Evolution, 1999, 14, 156-160.	8.7	167
3	Self-similarity of extinction statistics in the fossil record. Nature, 1997, 388, 764-767.	27.8	156
4	Evolutionary Transition toward Defective RNAs That Are Infectious by Complementation. Journal of Virology, 2004, 78, 11678-11685.	3.4	150
5	Role of Intermittency in Urban Development: A Model of Large-Scale City Formation. Physical Review Letters, 1997, 79, 523-526.	7.8	148
6	Are rainforests self-organized in a critical state?. Journal of Theoretical Biology, 1995, 173, 31-40.	1.7	146
7	Eukaryotic Community Distribution and Its Relationship to Water Physicochemical Parameters in an Extreme Acidic Environment, Rìo Tinto (Southwestern Spain). Applied and Environmental Microbiology, 2006, 72, 5325-5330.	3.1	126
8	Extinction and self-organized criticality in a model of large-scale evolution. Physical Review E, 1996, 54, R42-R45.	2.1	118
9	The turning point and end of an expanding epidemic cannot be precisely forecast. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 26190-26196.	7.1	117
10	Resistance of virus to extinction on bottleneck passages: Study of a decaying and fluctuating pattern of fitness loss. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 10830-10835.	7.1	109
11	Stochastic multiplicative processes with reset events. Physical Review E, 1999, 59, 4945-4948.	2.1	106
12	Mutual synchronization and clustering in randomly coupled chaotic dynamical networks. Physical Review E, 1999, 60, 1579-1589.	2.1	102
13	Viral Genome Segmentation Can Result from a Trade-Off between Genetic Content and Particle Stability. PLoS Genetics, 2011, 7, e1001344.	3.5	95
14	Quasispecies dynamics and RNA virus extinction. Virus Research, 2005, 107, 129-139.	2.2	93
15	Phase transitions and complex systems: <i>Simple, nonlinear models capture complex systems at the edge of chaos</i>. Complexity, 1996, 1, 13-26.	1.6	92
16	Vertical transmission of culture and the distribution of family names. Physica A: Statistical Mechanics and Its Applications, 2001, 295, 1-8.	2.6	90
17	The dawn of the RNA World: Toward functional complexity through ligation of random RNA oligomers. Rna, 2009, 15, 743-749.	3.5	89
18	High mutation rates, bottlenecks, and robustness of RNA viral quasispecies. Gene, 2005, 347, 273-282.	2.2	84

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19	Biodiversity in model ecosystems, I: coexistence conditions for competing species. Journal of Theoretical Biology, 2005, 235, 521-530.	1.7	77
20	Topological Structure of the Space of Phenotypes: The Case of RNA Neutral Networks. PLoS ONE, 2011, 6, e26324.	2.5	72
21	Potential Benefits of Sequential Inhibitor-Mutagen Treatments of RNA Virus Infections. PLoS Pathogens, 2009, 5, e1000658.	4.7	68
22	Population Bottlenecks in Quasispecies Dynamics. , 2006, 299, 141-170.		67
23	Multipartite viruses: adaptive trick or evolutionary treat?. Npj Systems Biology and Applications, 2017, 3, 34.	3.0	62
24	Modeling Viral Genome Fitness Evolution Associated with Serial Bottleneck Events: Evidence of Stationary States of Fitness. Journal of Virology, 2002, 76, 8675-8681.	3.4	58
25	Pathways to extinction: beyond the error threshold. Philosophical Transactions of the Royal Society B: Biological Sciences, 2010, 365, 1943-1952.	4.0	57
26	Evolutionary dynamics of genome segmentation in multipartite viruses. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 3812-3819.	2.6	54
27	Shape of Ecological Networks. Physical Review Letters, 2001, 86, 4418-4421.	7.8	49
28	From genotypes to organisms: State-of-the-art and perspectives of a cornerstone in evolutionary dynamics. Physics of Life Reviews, 2021, 38, 55-106.	2.8	49
29	Intermittency model for urban development. Physical Review E, 1998, 58, 295-302.	2.1	48
30	On the Genealogy of a Population of Biparental Individuals. Journal of Theoretical Biology, 2000, 203, 303-315.	1.7	48
31	Viral evolution. Physics of Life Reviews, 2006, 3, 65-92.	2.8	48
32	The impact of quasispecies dynamics on the use of therapeutics. Trends in Microbiology, 2012, 20, 595-603.	7.7	48
33	At the Boundary between Biological and Cultural Evolution: The Origin of Surname Distributions. Journal of Theoretical Biology, 2002, 216, 461-477.	1.7	44
34	Modular evolution and increase of functional complexity in replicating RNA molecules. Rna, 2006, 13, 97-107.	3.5	44
35	Disentangling the effects of selection and loss bias on gene dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5616-E5624.	7.1	44
36	On the structural repertoire of pools of short, random RNA sequences. Journal of Theoretical Biology, 2008, 252, 750-763.	1.7	43

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37	Internal Disequilibria and Phenotypic Diversification during Replication of Hepatitis C Virus in a Noncoevolving Cellular Environment. Journal of Virology, 2017, 91, .	3.4	42
38	Self-similarity in rain forests: Evidence for a critical state. Physical Review E, 1995, 51, 6250-6253.	2.1	41
39	On the networked architecture of genotype spaces and its critical effects on molecular evolution. Open Biology, 2018, 8, .	3.6	41
40	On Forest Spatial Dynamics with Gap Formation. Journal of Theoretical Biology, 1997, 187, 159-164.	1.7	40
41	Statistical Properties of Genealogical Trees. Physical Review Letters, 1999, 82, 1987-1990.	7.8	39
42	Tempo and mode of inhibitorâ€"mutagen antiviral therapies: A multidisciplinary approach. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 16008-16013.	7.1	38
43	Extinction: bad genes or weak chaos?. Proceedings of the Royal Society B: Biological Sciences, 1996, 263, 1407-1413.	2.6	37
44	Collective properties of evolving molecular quasispecies. BMC Evolutionary Biology, 2007, 7, 110.	3.2	36
45	Foot-and-Mouth Disease Virus Evolution: Exploring Pathways Towards Virus Extinction. Current Topics in Microbiology and Immunology, 2005, 288, 149-173.	1.1	35
46	Stochastic extinction of viral infectivity through the action of defectors. Europhysics Letters, 2009, 85, 18001.	2.0	34
47	Efficient HIV-1 inhibition by a 16 nt-long RNA aptamer designed by combining in vitro selection and in silico optimisation strategies. Scientific Reports, 2014, 4, 6242.	3.3	34
48	Fitness Distributions in Exponentially Growing Asexual Populations. Physical Review Letters, 2003, 90, 188102.	7.8	33
49	Large-Scale Genomic Analysis Suggests a Neutral Punctuated Dynamics of Transposable Elements in Bacterial Genomes. PLoS Computational Biology, 2014, 10, e1003680.	3.2	32
50	Evolutionary dynamics on networks of selectively neutral genotypes: Effects of topology and sequence stability. Physical Review E, 2009, 80, 066112.	2.1	30
51	Distribution of genotype network sizes in sequence-to-structure genotypeâ€"phenotype maps. Journal of the Royal Society Interface, 2017, 14, 20160976.	3.4	30
52	Self-organized criticality in rainforest dynamics. Chaos, Solitons and Fractals, 1996, 7, 523-541.	5.1	29
53	The vast unknown microbial biosphere. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6585-6587.	7.1	29
54	Small-world behaviour in a system of mobile elements. Europhysics Letters, 2001, 53, 693-699.	2.0	28

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55	Biodiversity in model ecosystems, II: species assembly and food web structure. Journal of Theoretical Biology, 2005, 235, 531-539.	1.7	28
56	River density and landscape roughness are universal determinants of linguistic diversity. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20133029.	2.6	27
57	Aftershock series of event February 18, 1996: An interpretation in terms of self-organized criticality. Journal of Geophysical Research, 1997, 102, 27407-27420.	3.3	25
58	Influence of Mutagenesis and Viral Load on the Sustained Low-Level Replication of an RNA Virus. Journal of Molecular Biology, 2011, 407, 60-78.	4.2	25
59	Criticality and unpredictability in macroevolution. Physical Review E, 1997, 55, 4500-4507.	2.1	24
60	TRANSIENT DYNAMICS AND SCALING PHENOMENA IN URBAN GROWTH. Fractals, 1999, 07, 1-8.	3.7	24
61	Statistical theory of phenotype abundance distributions: A test through exact enumeration of genotype spaces. Europhysics Letters, 2018, 123, 28001.	2.0	24
62	Distribution of repetitions of ancestors in genealogical trees. Physica A: Statistical Mechanics and Its Applications, 2000, 281, 1-16.	2.6	23
63	Evolution on neutral networks accelerates the ticking rate of the molecular clock. Journal of the Royal Society Interface, 2015, 12, 20141010.	3.4	23
64	Scaling of voids and fractality in the galaxy distribution. Monthly Notices of the Royal Astronomical Society, 2002, 335, 977-983.	4.4	22
65	Phenotypic effect of mutations in evolving populations of RNA molecules. BMC Evolutionary Biology, 2010, 10, 46.	3.2	22
66	toyLIFE: a computational framework to study the multi-level organisation of the genotype-phenotype map. Scientific Reports, 2014, 4, 7549.	3.3	22
67	Adaptive multiscapes: an up-to-date metaphor to visualize molecular adaptation. Biology Direct, 2017, 12, 7.	4.6	22
68	Globally coupled logistic maps as dynamical glasses. Europhysics Letters, 2001, 53, 451-457.	2.0	20
69	Very long transients in globally coupled maps. Europhysics Letters, 2000, 50, 580-586.	2.0	19
70	Effects of Spatial Competition on the Diversity of a Quasispecies. Physical Review Letters, 2008, 100, 038106.	7.8	19
71	Enumerating secondary structures and structural moieties for circular RNAs. Journal of Theoretical Biology, 2017, 419, 375-382.	1.7	19
72	Adding levels of complexity enhances robustness and evolvability in a multilevel genotypeâ€"phenotype map. Journal of the Royal Society Interface, 2018, 15, 20170516.	3.4	19

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73	Diversity Patterns from Ecological Models at Dynamical Equilibrium. Journal of Theoretical Biology, 2001, 212, 11-34.	1.7	18
74	Variable Mutation Rates as an Adaptive Strategy in Replicator Populations. PLoS ONE, 2010, 5, e11186.	2.5	18
75	Theoretical approaches to disclosing the emergence and adaptive advantages of multipartite viruses. Current Opinion in Virology, 2018, 33, 89-95.	5.4	18
76	A trade-off between neutrality and adaptability limits the optimization of viral quasispecies. Journal of Theoretical Biology, 2009, 261, 148-155.	1.7	17
77	Topological properties of phylogenetic trees in evolutionary models. European Physical Journal B, 2009, 70, 583-592.	1.5	17
78	Struggle for Space: Viral Extinction through Competition for Cells. Physical Review Letters, 2011, 106, 028104.	7.8	17
79	Modelling viral evolution and adaptation: challenges and rewards. Current Opinion in Virology, 2012, 2, 531-537.	5.4	17
80	Populations of genetic circuits are unable to find the fittest solution in a multilevel genotypeâ€“phenotype map. Journal of the Royal Society Interface, 2020, 17, 20190843.	3.4	17
81	The space of genotypes is a network of networks: implications for evolutionary and extinction dynamics. Scientific Reports, 2017, 7, 13813.	3.3	16
82	Reconstructing evolutionary relationships from functional data: a consistent classification of organisms based on translation inhibition response. Molecular Phylogenetics and Evolution, 2005, 34, 371-381.	2.7	15
83	Genealogy in the Era of Genomics. American Scientist, 2003, 91, 158.	0.1	15
84	Motif frequency and evolutionary search times in RNA populations. Journal of Theoretical Biology, 2011, 280, 117-126.	1.7	14
85	A Simple Model of Large Scale Organization in Evolution. International Journal of Modern Physics C, 1998, 09, 1025-1032.	1.7	13
86	Fractal properties of isolines at varying altitude revealing different dominant geological processes on Earth. Journal of Geophysical Research, 2008, 113, .	3.3	13
87	Dynamical community structure of populations evolving on genotype networks. Chaos, Solitons and Fractals, 2015, 72, 99-106.	5.1	13
88	Long-range transport and universality classes in in vitro viral infection spread. Europhysics Letters, 2006, 74, 547-553.	2.0	12
89	Parsimonious Scenario for the Emergence of Viroid-Like Replicons De Novo. Viruses, 2019, 11, 425.	3.3	12
90	Long-Range Correlations in the Fossil Record and the Fractal Nature of Macroevolution. International Journal of Modeling, Simulation, and Scientific Computing, 1998, 01, 255-266.	1.4	11

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91	Motif selection in a model of evolving replicators: The role of surfaces and limited transport in network topology. Europhysics Letters, 2003, 64, 557-563.	2.0	11
92	Spiders: Water-Driven Erosive Structures in the Southern Hemisphere of Mars. Astrobiology, 2006, 6, 651-667.	3.0	11
93	Differences in adaptive dynamics determine the success of virus variants that propagate together. Virus Evolution, 2018, 4, vex043.	4.9	11
94	Severe Hindrance of Viral Infection Propagation in Spatially Extended Hosts. PLoS ONE, 2011, 6, e23358.	2.5	11
95	Tipping points and early warning signals in the genomic composition of populations induced by environmental changes. Scientific Reports, 2015, 5, 9664.	3.3	10
96	Endemicity and prevalence of multipartite viruses under heterogeneous between-host transmission. PLoS Computational Biology, 2019, 15, e1006876.	3.2	10
97	ON THE FRACTAL NATURE OF ECOLOGICAL AND MACROEVOLUTIONARY DYNAMICS. Fractals, 2001, 09, 1-16.	3.7	9
98	Out-of-equilibrium competitive dynamics of quasispecies. Europhysics Letters, 2007, 77, 38001.	2.0	9
99	Fat tails and black swans: Exact results for multiplicative processes with resets. Chaos, 2020, 30, 033104.	2.5	9
100	Individual risk-aversion responses tune epidemics to critical transmissibility (<i>R</i> = 1). Royal Society Open Science, 2022, 9, 211667.	2.4	9
101	Evolutionary Dynamics in the RNA Bacteriophage QÎ² Depends on the Pattern of Change in Selective Pressures. Pathogens, 2019, 8, 80.	2.8	8
102	Role of Demographic Dynamics and Conflict in the Population-Area Relationship for Human Languages. PLoS ONE, 2012, 7, e40137.	2.5	6
103	Zanette and Manrubia Reply:. Physical Review Letters, 1998, 80, 4831-4831.	7.8	5
104	SHAPE MATTERS: EFFECT OF POINT MUTATIONS ON RNA SECONDARY STRUCTURE. International Journal of Modeling, Simulation, and Scientific Computing, 2013, 16, 1250052.	1.4	5
105	New patterns in human biogeography revealed by networks of contacts between linguistic groups. Proceedings of the Royal Society B: Biological Sciences, 2015, 282, 20142947.	2.6	5
106	Getting to Know Viral Evolutionary Strategies: Towards the Next Generation of Quasispecies Models. Current Topics in Microbiology and Immunology, 2015, 392, 201-217.	1.1	5
107	Replica-symmetry breaking in dynamical glasses. European Physical Journal B, 2001, 23, 497-508.	1.5	4
108	Limited role of spatial self-structuring in emergent trade-offs during pathogen evolution. Scientific Reports, 2018, 8, 12476.	3.3	4

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109	Unresolved advantages of multipartitism in spatially structured environments. Virus Evolution, 2021, 7, veab004.	4.9	4
110	Epistasis between cultural traits causes paradigm shifts in cultural evolution. Royal Society Open Science, 2020, 7, 191813.	2.4	3
111	Neutral networks of genotypes: evolution behind the curtain. Arbor, 2010, 186, 1051-1064.	0.3	3
112	The simple emergence of complex molecular function. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, .	3.4	3
113	Neutral networks and chemical function in RNA. Physics of Life Reviews, 2012, 9, 277-278.	2.8	2
114	The Uncertain Future in How a Virus Spreads. Physics Magazine, 2020, 13, .	0.1	2
115	SYNCHRONIZATION AND CLUSTERING IN COUPLED SAW-TOOTH MAPS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2000, 10, 2465-2478.	1.7	1
116	Supercritical branching processes and the role of fluctuations under exponential population growth. Journal of Theoretical Biology, 2003, 225, 497-505.	1.7	1
117	Evolution of fast mutating replicatorsâ€"RNA viruses and the RNA world. Physica A: Statistical Mechanics and Its Applications, 2006, 371, 80-83.	2.6	1
118	Demography-based adaptive network model reproduces the spatial organization of human linguistic groups. Physical Review E, 2015, 92, 062811.	2.1	1
119	WhatÊ¼s in a name?. Physics of Life Reviews, 2013, 10, 424-425.	2.8	0
120	EMERGENCE AND SELECTION OF BIOMODULES: STEPS IN THE ASSEMBLY OF A PROTOCELL. World Scientific Lecture Notes in Complex Systems, 2013, , 323-343.	0.1	0
121	Populations of RNA Molecules as Computational Model for Evolution. , 2010, , 67-79.		0
122	The long and winding road to understanding organismal construction. Physics of Life Reviews, 2022, 42, 19-24.	2.8	0