Van M Savage

List of Publications by Year
in descending order

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77 papers	17,936 citations	61857 43 h-index	71532 76 g-index
82 all docs	82 docs citations	82 times ranked	18638 citing authors

#	Article	IF	Citations
1	TOWARD A METABOLIC THEORY OF ECOLOGY. Ecology, 2004, 85, 1771-1789.	1.5	5,745
2	Effects of Size and Temperature on Metabolic Rate. Science, 2001, 293, 2248-2251.	6.0	2,927
3	Effects of size and temperature on developmental time. Nature, 2002, 417, 70-73.	13.7	798
4	Effects of Body Size and Temperature on Population Growth. American Naturalist, 2004, 163, 429-441.	1.0	767
5	Systematic variation in the temperature dependence of physiological and ecological traits. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 10591-10596.	3.3	709
6	Increased temperature variation poses a greater risk to species than climate warming. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20132612.	1.2	674
7	Detecting the impact of temperature on transmission of Zika, dengue, and chikungunya using mechanistic models. PLoS Neglected Tropical Diseases, 2017, 11, e0005568.	1.3	430
8	Kinetic effects of temperature on rates of genetic divergence and speciation. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 9130-9135.	3.3	379
9	Temperature dependence of trophic interactions are driven by asymmetry of species responses and foraging strategy. Journal of Animal Ecology, 2014, 83, 70-84.	1.3	370
10	Thermal biology of mosquitoâ€borne disease. Ecology Letters, 2019, 22, 1690-1708.	3.0	349
11	Curvature in metabolic scaling. Nature, 2010, 464, 753-756.	13.7	293
12	Scaling from Traits to Ecosystems. Advances in Ecological Research, 2015, , 249-318.	1.4	277
13	A bioenergetic framework for the temperature dependence of trophic interactions. Ecology Letters, 2014, 17, 902-914.	3.0	268
14	Scaling of number, size, and metabolic rate of cells with body size in mammals. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 4718-4723.	3.3	262
15	Dimensionality of consumer search space drives trophic interaction strengths. Nature, 2012, 486, 485-489.	13.7	254
16	Thermodynamic and metabolic effects on the scaling of production and population energy use. Ecology Letters, 2003, 6, 990-995.	3.0	215
17	Sizing Up Allometric Scaling Theory. PLoS Computational Biology, 2008, 4, e1000171.	1.5	198
18	Hydraulic trade-offs and space filling enable better predictions of vascular structure and function in plants. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22722-22727.	3.3	186

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19	A Framework for Elucidating the Temperature Dependence of Fitness. American Naturalist, 2012, 179, 178-191.	1.0	168
20	Testing the metabolic theory of ecology. Ecology Letters, 2012, 15, 1465-1474.	3.0	155
21	A general model for allometric covariation in botanical form and function. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 13204-13209.	3.3	152
22	The metabolic basis of whole-organism RNA and phosphorus content. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 11923-11927.	3.3	151
23	Climate shapes and shifts functional biodiversity in forests worldwide. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 587-592.	3.3	131
24	The Body Size Dependence of Trophic Cascades. American Naturalist, 2015, 185, 354-366.	1.0	110
25	Body sizes of hosts and parasitoids in individual feeding relationships. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 684-689.	3.3	92
26	A general multi-trait-based framework for studying the effects of biodiversity on ecosystem functioning. Journal of Theoretical Biology, 2007, 247, 213-229.	0.8	90
27	An empirical assessment of tree branching networks and implications for plant allometric scaling models. Ecology Letters, 2013, 16, 1069-1078.	3.0	89
28	A quantitative, theoretical framework for understanding mammalian sleep. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 1051-1056.	3.3	80
29	Quantifying antibody kinetics and RNA detection during early-phase SARS-CoV-2 infection by time since symptom onset. ELife, 2020, 9, .	2.8	74
30	Real versus Artificial Variation in the Thermal Sensitivity of Biological Traits. American Naturalist, 2016, 187, E41-E52.	1.0	73
31	Prevalence and patterns of higher-order drug interactions in Escherichia coli. Npj Systems Biology and Applications, 2018, 4, 31.	1.4	71
32	Improved approximations to scaling relationships for species, populations, and ecosystems across latitudinal and elevational gradients. Journal of Theoretical Biology, 2004, 227, 525-534.	0.8	70
33	A Quantitative Theory of Solid Tumor Growth, Metabolic Rate and Vascularization. PLoS ONE, 2011, 6, e22973.	1.1	70
34	Conjecture on the interlacing of zeros in complex Sturmâ€“Liouville problems. Journal of Mathematical Physics, 2000, 41, 6381-6387.	0.5	67
35	Variational ansatz for -symmetric quantum mechanics. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 259, 224-231.	0.9	63
36	Stressor interaction networks suggest antibiotic resistance co-opted from stress responses to temperature. ISME Journal, 2019, 13, 12-23.	4.4	62

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37	Assessing traitâ€based scaling theory in tropical forests spanning a broad temperature gradient. Global Ecology and Biogeography, 2017, 26, 1357-1373.	2.7	57
38	Deviation from symmetrically selfâ€similar branching in trees predicts altered hydraulics, mechanics, light interception and metabolic scaling. New Phytologist, 2014, 201, 217-229.	3.5	55
39	Enhanced identification of synergistic and antagonistic emergent interactions among three or more drugs. Journal of the Royal Society Interface, 2016, 13, 20160332.	1.5	55
40	Compounding Effects of Climate Warming and Antibiotic Resistance. IScience, 2020, 23, 101024.	1.9	54
41	Informing trait-based ecology by assessing remotely sensed functional diversity across a broad tropical temperature gradient. Science Advances, 2019, 5, eaaw8114.	4.7	51
42	Unraveling why we sleep: Quantitative analysis reveals abrupt transition from neural reorganization to repair in early development. Science Advances, 2020, 6, .	4.7	50
43	RESPONSE TO FORUM COMMENTARY ON â€œTOWARD A METABOLIC THEORY OF ECOLOGYâ€• Ecology, 2004, 85, 1818-1821.	1.5	47
44	A speciesâ€level model for metabolic scaling in trees I. Exploring boundaries to scaling space within and across species. Functional Ecology, 2012, 26, 1054-1065.	1.7	47
45	Setting the absolute tempo of biodiversity dynamics. Ecology Letters, 2007, 10, 637-646.	3.0	46
46	The thermal dependence of biological traits. Ecology, 2013, 94, 1205-1206.	1.5	44
47	Using a newly introduced framework to measure ecological stressor interactions. Ecology Letters, 2020, 23, 1391-1403.	3.0	43
48	Uncovering emergent interactions in three-way combinations of stressors. Journal of the Royal Society Interface, 2016, 13, 20160800.	1.5	40
49	From Metabolic Constraints onÂIndividuals to the Dynamics of Ecosystems. , 2015, , 3-36.		36
50	Do Vascular Networks Branch Optimally or Randomly across Spatial Scales?. PLoS Computational Biology, 2016, 12, e1005223.	1.5	34
51	A general model for metabolic scaling in self-similar asymmetric networks. PLoS Computational Biology, 2017, 13, e1005394.	1.5	33
52	A speciesâ€level model for metabolic scaling of trees <scp>II</scp>. Testing in a ringâ€and diffuseâ€porous species. Functional Ecology, 2012, 26, 1066-1076.	1.7	32
53	Social tipping points in animal societies. Proceedings of the Royal Society B: Biological Sciences, 2018, 285, 20181282.	1.2	32
54	Measuring higher-order drug interactions: A review of recent approaches. Current Opinion in Systems Biology, 2017, 4, 16-23.	1.3	29

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55	When more is less: Emergent suppressive interactions in three-drug combinations. BMC Microbiology, 2017, 17, 107.	1.3	27
56	Optimal occlusion uniformly partitions red blood cells fluxes within a microvascular network. PLoS Computational Biology, 2017, 13, e1005892.	1.5	25
57	Testing Foundations of Biological Scaling Theory Using Automated Measurements of Vascular Networks. PLoS Computational Biology, 2015, 11, e1004455.	1.5	24
58	The allometry of locomotion. Ecology, 2021, 102, e03369.	1.5	23
59	Predicting collapse of complex ecological systems: quantifying the stabilityâ€“complexity continuum. Journal of the Royal Society Interface, 2020, 17, 20190391.	1.5	20
60	Intermediate Levels of Antibiotics May Increase Diversity of Colony Size Phenotype in Bacteria. Computational and Structural Biotechnology Journal, 2018, 16, 307-315.	1.9	15
61	Asymmetries arising from the space-filling nature of vascular networks. Physical Review E, 2016, 93, 062305.	0.8	14
62	Interaction Dimensionality Scales Up to Generate Bimodal Consumer-Resource Size-Ratio Distributions in Ecological Communities. Frontiers in Ecology and Evolution, 2019, 7, .	1.1	14
63	Branching principles of animal and plant networks identified by combining extensive data, machine learning and modelling. Journal of the Royal Society Interface, 2021, 18, 20200624.	1.5	12
64	Using fractal geometry and universal growth curves as diagnostics for comparing tumor vasculature and metabolic rate with healthy tissue and for predicting responses to drug therapies. Discrete and Continuous Dynamical Systems - Series B, 2013, 18, 1077-1108.	0.5	12
65	Comment on `A critical understanding of the fractal model of metabolic scaling'. Journal of Experimental Biology, 2007, 210, 3873-3874.	0.8	11
66	Novelist Cormac McCarthyâ€™s tips on how to write a great science paper. Nature, 2019, 574, 441-442.	13.7	9
67	Stability of ecosystems enhanced by species-interaction constraints. Physical Review E, 2020, 102, 062405.	0.8	9
68	Pawar et al. reply. Nature, 2013, 493, E2-E3.	13.7	7
69	A Path-Integral Approach to Bayesian Inference for Inverse Problems Using the Semiclassical Approximation. Journal of Statistical Physics, 2014, 157, 582-602.	0.5	7
70	Antibiotics Shift the Temperature Response Curve of Escherichia coli Growth. MSystems, 2021, 6, e0022821.	1.7	7
71	Self-Similar Processes Follow a Power Law in Discrete Logarithmic Space. Physical Review Letters, 2019, 122, 158303.	2.9	6
72	Cancer as a Model System for Testing Metabolic Scaling Theory. Frontiers in Ecology and Evolution, 2021, 9, .	1.1	6

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73	How reliable is the biological time clock?. Nature, 2003, 424, 270-270.	13.7	5
74	Curvature in metabolic scaling: A reply to MacKay. Journal of Theoretical Biology, 2011, 280, 197-198.	0.8	5
75	Improving Blood Vessel Tortuosity Measurements via Highly Sampled Numerical Integration of the Frenet-Serret Equations. IEEE Transactions on Medical Imaging, 2021, 40, 297-309.	5.4	5
76	Improving landscapeâ€scale productivity estimates by integrating traitâ€based models and remotelyâ€sensed foliarâ€trait and canopyâ€structural data. Ecography, 2022, 2022, .	2.1	4
77	Hidden suppressive interactions are common in higher-order drug combinations. IScience, 2021, 24, 102355.	1.9	2