Van M Savage

List of Publications by Year
in descending order

77 papers	17,936 citations	71004 43 h-index	81351 76 g-index
82 all docs	82 docs citations	82 times ranked	21000 citing authors

#	Article	IF	Citations
1	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
2	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
3	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
4	Hidden suppressive interactions are common in higher-order drug combinations. IScience, 2021, 24, 102355.	1.9	2
5	The allometry of locomotion. Ecology, 2021, 102, e03369.	1.5	23
6	Antibiotics Shift the Temperature Response Curve of Escherichia coli Growth. MSystems, 2021, 6, e0022821.	1.7	7
7	Cancer as a Model System for Testing Metabolic Scaling Theory. Frontiers in Ecology and Evolution, 2021, 9, .	1.1	6
8	Using a newly introduced framework to measure ecological stressor interactions. Ecology Letters, 2020, 23, 1391-1403.	3.0	43
9	Stability of ecosystems enhanced by species-interaction constraints. Physical Review E, 2020, 102, 062405.	0.8	9
10	Unraveling why we sleep: Quantitative analysis reveals abrupt transition from neural reorganization to repair in early development. Science Advances, 2020, 6, .	4.7	50
11	Compounding Effects of Climate Warming and Antibiotic Resistance. IScience, 2020, 23, 101024.	1.9	54
12	Predicting collapse of complex ecological systems: quantifying the stabilityâ€“complexity continuum. Journal of the Royal Society Interface, 2020, 17, 20190391.	1.5	20
13	Quantifying antibody kinetics and RNA detection during early-phase SARS-CoV-2 infection by time since symptom onset. ELife, 2020, 9, .	2.8	74
14	Thermal biology of mosquitoâ€borne disease. Ecology Letters, 2019, 22, 1690-1708.	3.0	349
15	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
16	Self-Similar Processes Follow a Power Law in Discrete Logarithmic Space. Physical Review Letters, 2019, 122, 158303.	2.9	6
17	Novelist Cormac McCarthyâ€™s tips on how to write a great science paper. Nature, 2019, 574, 441-442.	13.7	9
18	Informing trait-based ecology by assessing remotely sensed functional diversity across a broad tropical temperature gradient. Science Advances, 2019, 5, eaaw8114.	4.7	51

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19	Stressor interaction networks suggest antibiotic resistance co-opted from stress responses to temperature. ISME Journal, 2019, 13, 12-23.	4.4	62
20	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
21	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
22	Social tipping points in animal societies. Proceedings of the Royal Society B: Biological Sciences, 2018, 285, 20181282.	1.2	32
23	Prevalence and patterns of higher-order drug interactions in Escherichia coli. Npj Systems Biology and Applications, 2018, 4, 31.	1.4	71
24	Assessing traitâ€based scaling theory in tropical forests spanning a broad temperature gradient. Global Ecology and Biogeography, 2017, 26, 1357-1373.	2.7	57
25	Measuring higher-order drug interactions: A review of recent approaches. Current Opinion in Systems Biology, 2017, 4, 16-23.	1.3	29
26	When more is less: Emergent suppressive interactions in three-drug combinations. BMC Microbiology, 2017, 17, 107.	1.3	27
27	A general model for metabolic scaling in self-similar asymmetric networks. PLoS Computational Biology, 2017, 13, e1005394.	1.5	33
28	Optimal occlusion uniformly partitions red blood cells fluxes within a microvascular network. PLoS Computational Biology, 2017, 13, e1005892.	1.5	25
29	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
30	Do Vascular Networks Branch Optimally or Randomly across Spatial Scales?. PLoS Computational Biology, 2016, 12, e1005223.	1.5	34
31	Uncovering emergent interactions in three-way combinations of stressors. Journal of the Royal Society Interface, 2016, 13, 20160800.	1.5	40
32	Real versus Artificial Variation in the Thermal Sensitivity of Biological Traits. American Naturalist, 2016, 187, E41-E52.	1.0	73
33	Asymmetries arising from the space-filling nature of vascular networks. Physical Review E, 2016, 93, 062305.	0.8	14
34	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
35	Testing Foundations of Biological Scaling Theory Using Automated Measurements of Vascular Networks. PLoS Computational Biology, 2015, 11, e1004455.	1.5	24
36	The Body Size Dependence of Trophic Cascades. American Naturalist, 2015, 185, 354-366.	1.0	110

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37	Scaling from Traits to Ecosystems. Advances in Ecological Research, 2015, , 249-318.	1.4	277
38	From Metabolic Constraints onÂIndividuals to the Dynamics of Ecosystems. , 2015, , 3-36.		36
39	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
40	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
41	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
42	A bioenergetic framework for the temperature dependence of trophic interactions. Ecology Letters, 2014, 17, 902-914.	3.0	268
43	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
44	An empirical assessment of tree branching networks and implications for plant allometric scaling models. Ecology Letters, 2013, 16, 1069-1078.	3.0	89
45	The thermal dependence of biological traits. Ecology, 2013, 94, 1205-1206.	1.5	44
46	Pawar et al. reply. Nature, 2013, 493, E2-E3.	13.7	7
47	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
48	Testing the metabolic theory of ecology. Ecology Letters, 2012, 15, 1465-1474.	3.0	155
49	Dimensionality of consumer search space drives trophic interaction strengths. Nature, 2012, 486, 485-489.	13.7	254
50	A Framework for Elucidating the Temperature Dependence of Fitness. American Naturalist, 2012, 179, 178-191.	1.0	168
51	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
52	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
53	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
54	A Quantitative Theory of Solid Tumor Growth, Metabolic Rate and Vascularization. PLoS ONE, 2011, 6, e22973.	1.1	70

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55	Curvature in metabolic scaling: A reply to MacKay. Journal of Theoretical Biology, 2011, 280, 197-198.	0.8	5
56	Curvature in metabolic scaling. Nature, 2010, 464, 753-756.	13.7	293
57	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
58	Sizing Up Allometric Scaling Theory. PLoS Computational Biology, 2008, 4, e1000171.	1.5	198
59	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
60	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
61	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
62	Comment on `A critical understanding of the fractal model of metabolic scaling'. Journal of Experimental Biology, 2007, 210, 3873-3874.	0.8	11
63	Setting the absolute tempo of biodiversity dynamics. Ecology Letters, 2007, 10, 637-646.	3.0	46
64	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
65	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
66	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
67	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
68	RESPONSE TO FORUM COMMENTARY ON â€œTOWARD A METABOLIC THEORY OF ECOLOGYâ€• Ecology, 2004, 85, 1818-1821.	1.5	47
69	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
70	Effects of Body Size and Temperature on Population Growth. American Naturalist, 2004, 163, 429-441.	1.0	767
71	TOWARD A METABOLIC THEORY OF ECOLOGY. Ecology, 2004, 85, 1771-1789.	1.5	5,745
72	Thermodynamic and metabolic effects on the scaling of production and population energy use. Ecology Letters, 2003, 6, 990-995.	3.0	215

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73	How reliable is the biological time clock?. Nature, 2003, 424, 270-270.	13.7	5
74	Effects of size and temperature on developmental time. Nature, 2002, 417, 70-73.	13.7	798
75	Effects of Size and Temperature on Metabolic Rate. Science, 2001, 293, 2248-2251.	6.0	2,927
76	Conjecture on the interlacing of zeros in complex Sturmâ€“Liouville problems. Journal of Mathematical Physics, 2000, 41, 6381-6387.	0.5	67
77	Variational ansatz for -symmetric quantum mechanics. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 259, 224-231.	0.9	63