Steven D Allison

List of Publications by Year
in descending order

128 papers	26,206 citations	13099 68 h-index	15732 125 g-index
137 all docs	137 docs citations	137 times ranked	22723 citing authors

#	Article	IF	Citations
1	Resistance, resilience, and redundancy in microbial communities. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 11512-11519.	7.1	2,195
2	Plant species traits are the predominant control on litter decomposition rates within biomes worldwide. Ecology Letters, 2008, 11, 1065-1071.	6.4	1,913
3	Stoichiometry of soil enzyme activity at global scale. Ecology Letters, 2008, 11, 1252-1264.	6.4	1,684
4	Soil-carbon response to warming dependent on microbial physiology. Nature Geoscience, 2010, 3, 336-340.	12.9	1,192
5	Fundamentals of Microbial Community Resistance and Resilience. Frontiers in Microbiology, 2012, 3, 417.	3.5	1,131
6	Responses of extracellular enzymes to simple and complex nutrient inputs. Soil Biology and Biochemistry, 2005, 37, 937-944.	8.8	881
7	Quantifying global soil carbon losses in response to warming. Nature, 2016, 540, 104-108.	27.8	879
8	Optimization of hydrolytic and oxidative enzyme methods for ecosystem studies. Soil Biology and Biochemistry, 2011, 43, 1387-1397.	8.8	794
9	Global soil carbon projections are improved by modelling microbial processes. Nature Climate Change, 2013, 3, 909-912.	18.8	772
10	Drivers of bacterial Î²-diversity depend on spatial scale. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 7850-7854.	7.1	672
11	Causes of variation in soil carbon simulations from CMIP5 Earth system models and comparison with observations. Biogeosciences, 2013, 10, 1717-1736.	3.3	593
12	Challenges in microbial ecology: building predictive understanding of community function and dynamics. ISME Journal, 2016, 10, 2557-2568.	9.8	570
13	Warming and drying suppress microbial activity and carbon cycling in boreal forest soils. Global Change Biology, 2008, 14, 2898-2909.	9.5	511
14	Defining trait-based microbial strategies with consequences for soil carbon cycling under climate change. ISME Journal, 2020, 14, 1-9.	9.8	470
15	Decomposers in disguise: mycorrhizal fungi as regulators of soil C dynamics in ecosystems under global change. Functional Ecology, 2008, 22, 955-963.	3.6	450
16	Modeling Soil Processes: Review, Key Challenges, and New Perspectives. Vadose Zone Journal, 2016, 15, 1-57.	2.2	445
17	Cheaters, diffusion and nutrients constrain decomposition by microbial enzymes in spatially structured environments. Ecology Letters, 2005, 8, 626-635.	6.4	440
18	Toward more realistic projections of soil carbon dynamics by Earth system models. Global Biogeochemical Cycles, 2016, 30, 40-56.	4.9	343

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19	Microbial abundance and composition influence litter decomposition response to environmental change. Ecology, 2013, 94, 714-725.	3.2	340
20	Microbial activity and soil respiration under nitrogen addition in Alaskan boreal forest. Global Change Biology, 2008, 14, 1156-1168.	9.5	330
21	Activities of extracellular enzymes in physically isolated fractions of restored grassland soils. Soil Biology and Biochemistry, 2006, 38, 3245-3256.	8.8	325
22	Plant traits and wood fates across the globe: rotted, burned, or consumed?. Global Change Biology, 2009, 15, 2431-2449.	9.5	318
23	Rapid nutrient cycling in leaf litter from invasive plants in Hawai?i. Oecologia, 2004, 141, 612-619.	2.0	312
24	Temperature response of soil respiration largely unaltered with experimental warming. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 13797-13802.	7.1	308
25	A traitâ€based approach for modelling microbial litter decomposition. Ecology Letters, 2012, 15, 1058-1070.	6.4	307
26	Explicitly representing soil microbial processes in Earth system models. Global Biogeochemical Cycles, 2015, 29, 1782-1800.	4.9	286
27	The <scp>M</scp>ichaelisâ€"<scp>M</scp>enten kinetics of soil extracellular enzymes in response to temperature: a crossâ€latitudinal study. Global Change Biology, 2012, 18, 1468-1479.	9.5	284
28	Accelerated microbial turnover but constant growth efficiency with warming in soil. Nature Climate Change, 2014, 4, 903-906.	18.8	266
29	Changes in soil organic carbon storage predicted by Earth system models during the 21st century. Biogeosciences, 2014, 11, 2341-2356.	3.3	259
30	Effects of dispersal and selection on stochastic assembly in microbial communities. ISME Journal, 2017, 11, 176-185.	9.8	256
31	Nitrogen fertilization reduces diversity and alters community structure of active fungi in boreal ecosystems. Soil Biology and Biochemistry, 2007, 39, 1878-1887.	8.8	255
32	Soil microbes and their response to experimental warming over time: A meta-analysis of field studies. Soil Biology and Biochemistry, 2017, 107, 32-40.	8.8	234
33	Soil minerals and humic acids alter enzyme stability: implications for ecosystem processes. Biogeochemistry, 2006, 81, 361-373.	3.5	232
34	Temperature sensitivity of soil enzyme kinetics under<scp><scp>N</scp></scp>â€fertilization in two temperate forests. Global Change Biology, 2012, 18, 1173-1184.	9.5	215
35	Decomposition responses to climate depend on microbial community composition. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 11994-11999.	7.1	214
36	Microdiversity of extracellular enzyme genes among sequenced prokaryotic genomes. ISME Journal, 2013, 7, 1187-1199.	9.8	188

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37	A framework for representing microbial decomposition in coupled climate models. Biogeochemistry, 2012, 109, 19-33.	3.5	184
38	Low levels of nitrogen addition stimulate decomposition by boreal forest fungi. Soil Biology and Biochemistry, 2009, 41, 293-302.	8.8	183
39	Measuring phenol oxidase and peroxidase activities with pyrogallol, l-DOPA, and ABTS: Effect of assay conditions and soil type. Soil Biology and Biochemistry, 2013, 67, 183-191.	8.8	182
40	Fungal Taxa Target Different Carbon Sources in Forest Soil. Ecosystems, 2008, 11, 1157-1167.	3.4	174
41	Microbial enzymatic responses to drought and to nitrogen addition in a southern California grassland. Soil Biology and Biochemistry, 2013, 64, 68-79.	8.8	171
42	Radiocarbon constraints imply reduced carbon uptake by soils during the 21st century. Science, 2016, 353, 1419-1424.	12.6	149
43	Functional diversity in resource use by fungi. Ecology, 2010, 91, 2324-2332.	3.2	133
44	Substrate concentration and enzyme allocation can affect rates of microbial decomposition. Ecology, 2011, 92, 1471-1480.	3.2	133
45	Elemental stoichiometry of Fungi and Bacteria strains from grassland leaf litter. Soil Biology and Biochemistry, 2014, 76, 278-285.	8.8	133
46	Effects of Drought Manipulation on Soil Nitrogen Cycling: A Metaâ€Analysis. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3260-3272.	3.0	124
47	Evolutionary-Economic Principles as Regulators of Soil Enzyme Production and Ecosystem Function. Soil Biology, 2010, , 229-243.	0.8	124
48	Microbial response to simulated global change is phylogenetically conserved and linked with functional potential. ISME Journal, 2016, 10, 109-118.	9.8	123
49	The age distribution of global soil carbon inferred from radiocarbon measurements. Nature Geoscience, 2020, 13, 555-559.	12.9	123
50	Erosion and the Rejuvenation of Weathering-derived Nutrient Supply in an Old Tropical Landscape. Ecosystems, 2003, 6, 762-772.	3.4	122
51	Temporal variation overshadows the response of leaf litter microbial communities to simulated global change. ISME Journal, 2015, 9, 2477-2489.	9.8	112
52	Microbial legacies alter decomposition in response to simulated global change. ISME Journal, 2017, 11, 490-499.	9.8	112
53	Elevated enzyme activities in soils under the invasive nitrogen-fixing tree Falcataria moluccana. Soil Biology and Biochemistry, 2006, 38, 1537-1544.	8.8	111
54	Extracellular Enzyme Activities and Carbon Chemistry as Drivers of Tropical Plant Litter Decomposition. Biotropica, 2004, 36, 285-296.	1.6	110

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55	Modeling adaptation of carbon use efficiency in microbial communities. Frontiers in Microbiology, 2014, 5, 571.	3.5	106
56	Soil microbial communities with greater investment in resource acquisition have lower growth yield. Soil Biology and Biochemistry, 2019, 132, 36-39.	8.8	98
57	Nitrogen alters carbon dynamics during early succession in boreal forest. Soil Biology and Biochemistry, 2010, 42, 1157-1164.	8.8	96
58	Brown Ground: A Soil Carbon Analogue for the Green World Hypothesis?. American Naturalist, 2006, 167, 619-627.	2.1	92
59	Soil carbon sensitivity to temperature and carbon use efficiency compared across microbial-ecosystem models of varying complexity. Biogeochemistry, 2014, 119, 67-84.	3.5	89
60	Bacterial Tradeoffs in Growth Rate and Extracellular Enzymes. Frontiers in Microbiology, 2019, 10, 2956.	3.5	89
61	Ultraviolet photodegradation facilitates microbial litter decomposition in a Mediterranean climate. Ecology, 2015, 96, 1994-2003.	3.2	88
62	Climate change feedbacks to microbial decomposition in boreal soils. Fungal Ecology, 2011, 4, 362-374.	1.6	87
63	BIOCHEMICAL RESPONSES OF CHESTNUT OAK TO A GALLING CYNIPID. Journal of Chemical Ecology, 2005, 31, 151-166.	1.8	86
64	Resistance of microbial and soil properties to warming treatment seven years after boreal fire. Soil Biology and Biochemistry, 2010, 42, 1872-1878.	8.8	81
65	Drought and plant litter chemistry alter microbial gene expression and metabolite production. ISME Journal, 2020, 14, 2236-2247.	9.8	79
66	Environmental impacts on the diversity of methane-cycling microbes and their resultant function. Frontiers in Microbiology, 2013, 4, 225.	3.5	77
67	Differential Activity of Peroxidase Isozymes in Response to Wounding, Gypsy Moth, and Plant Hormones in Northern Red Oak (Quercus rubra L.). Journal of Chemical Ecology, 2004, 30, 1363-1379.	1.8	76
68	Soil aggregates as biogeochemical reactors and implications for soilâ€“atmosphere exchange of greenhouse gasesâ€”A concept. Global Change Biology, 2019, 25, 373-385.	9.5	76
69	Temperature sensitivities of extracellular enzyme <i>V</i>_{max} and <i>K</i>_m across thermal environments. Global Change Biology, 2018, 24, 2884-2897.	9.5	72
70	Reduced carbon use efficiency and increased microbial turnover with soil warming. Global Change Biology, 2019, 25, 900-910.	9.5	70
71	Ectomycorrhizal-Dominated Boreal and Tropical Forests Have Distinct Fungal Communities, but Analogous Spatial Patterns across Soil Horizons. PLoS ONE, 2013, 8, e68278.	2.5	69
72	Phylogenetic constraints on elemental stoichiometry and resource allocation in heterotrophic marine bacteria. Environmental Microbiology, 2014, 16, 1398-1410.	3.8	69

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73	Substrate concentration constraints on microbial decomposition. Soil Biology and Biochemistry, 2014, 79, 43-49.	8.8	64
74	Controls on the Temperature Sensitivity of Soil Enzymes: A Key Driver of In Situ Enzyme Activity Rates. Soil Biology, 2010, , 245-258.	0.8	63
75	Cooperation, Competition, and Coalitions in Enzyme-Producing Microbes: Social Evolution and Nutrient Depolymerization Rates. Frontiers in Microbiology, 2012, 3, 338.	3.5	61
76	Cellulolytic potential under environmental changes in microbial communities from grassland litter. Frontiers in Microbiology, 2014, 5, 639.	3.5	61
77	Consequences of drought tolerance traits for microbial decomposition in the DEMENT model. Soil Biology and Biochemistry, 2017, 107, 104-113.	8.8	60
78	Evaluating soil microbial carbon use efficiency explicitly as a function of cellular processes: implications for measurements and models. Biogeochemistry, 2018, 140, 269-283.	3.5	59
79	Embracing a new paradigm for temperature sensitivity of soil microbes. Global Change Biology, 2020, 26, 3221-3229.	9.5	54
80	Agroforestry Practices Promote Biodiversity and Natural Resource Diversity in Atlantic Nicaragua. PLoS ONE, 2016, 11, e0162529.	2.5	49
81	Fine-Scale Temporal Variation in Marine Extracellular Enzymes of Coastal Southern California. Frontiers in Microbiology, 2012, 3, 301.	3.5	48
82	Phylogenetic conservation of bacterial responses to soil nitrogen addition across continents. Nature Communications, 2019, 10, 2499.	12.8	48
83	A model for variable phytoplankton stoichiometry based on cell protein regulation. Biogeosciences, 2013, 10, 4341-4356.	3.3	42
84	Greenhouse gas fluxes under drought and nitrogen addition in a Southern California grassland. Soil Biology and Biochemistry, 2019, 131, 19-27.	8.8	41
85	Extracellular enzyme kinetics and thermodynamics along a climate gradient in southern California. Soil Biology and Biochemistry, 2017, 114, 82-92.	8.8	37
86	Interactive effects of precipitation manipulation and nitrogen addition on soil properties in California grassland and shrubland. Applied Soil Ecology, 2016, 107, 144-153.	4.3	36
87	Extracellular enzyme production and cheating in Pseudomonas fluorescens depend on diffusion rates. Frontiers in Microbiology, 2014, 5, 169.	3.5	35
88	Decomposition of recalcitrant carbon under experimental warming in boreal forest. PLoS ONE, 2017, 12, e0179674.	2.5	34
89	Emergent properties of organic matter decomposition by soil enzymes. Soil Biology and Biochemistry, 2019, 136, 107522.	8.8	33
90	Emergence of soil bacterial ecotypes along a climate gradient. Environmental Microbiology, 2018, 20, 4112-4126.	3.8	32

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91	Precipitation regime drives warming responses of microbial biomass and activity in temperate steppe soils. Biology and Fertility of Soils, 2016, 52, 469-477.	4.3	28
92	The effects of increased snow depth on plant and microbial biomass and community composition along a precipitation gradient in temperate steppes. Soil Biology and Biochemistry, 2018, 124, 134-141.	8.8	27
93	Meta-Analysis of Environmental Impacts on Nitrous Oxide Release in Response to N Amendment. Frontiers in Microbiology, 2012, 3, 272.	3.5	26
94	Drought increases the frequencies of fungal functional genes related to carbon and nitrogen acquisition. PLoS ONE, 2018, 13, e0206441.	2.5	24
95	Resource allocation by the marine cyanobacterium <scp><i>S</i></scp><i>ynechococcus</i><scp>WH</scp>8102 in response to different nutrient supply ratios. Limnology and Oceanography, 2015, 60, 1634-1641.	3.1	23
96	A framework for soil microbial ecology in urban ecosystems. Ecosphere, 2022, 13, .	2.2	23
97	Carbon flux and forest dynamics: Increased deadwood decomposition in tropical rainforest treeâ€fall canopy gaps. Global Change Biology, 2021, 27, 1601-1613.	9.5	22
98	Drought legacies mediated by trait tradeâ€offs in soil microbiomes. Ecosphere, 2021, 12, e03562.	2.2	21
99	Decreased mass specific respiration under experimental warming is robust to the microbial biomass method employed. Ecology Letters, 2009, 12, E15.	6.4	19
100	Nitrogen enrichment shifts functional genes related to nitrogen and carbon acquisition in the fungal community. Soil Biology and Biochemistry, 2018, 123, 87-96.	8.8	17
101	Temperature acclimation and adaptation of enzyme physiology in Neurospora discreta. Fungal Ecology, 2018, 35, 78-86.	1.6	17
102	Phosphate supply explains variation in nucleic acid allocation but not C : P stoichiometry in the western North Atlantic. Biogeosciences, 2014, 11, 1599-1611.	3.3	16
103	Microbial decomposers not constrained by climate history along a Mediterranean climate gradient in southern California. Ecology, 2018, 99, 1441-1452.	3.2	16
104	Microbes, memory and moisture: Predicting microbial moisture responses and their impact on carbon cycling. Functional Ecology, 2022, 36, 1430-1441.	3.6	15
105	Bacterial community response to environmental change varies with depth in the surface soil. Soil Biology and Biochemistry, 2022, 172, 108761.	8.8	15
106	Crowther et al. reply. Nature, 2018, 554, E7-E8.	27.8	14
107	Phylogenetic conservation of substrate use specialization in leaf litter bacteria. PLoS ONE, 2017, 12, e0174472.	2.5	14
108	Building Predictive Models for Diverse Microbial Communities in Soil. , 2017, , 141-166.		12

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109	Uptake of an amino acid by ectomycorrhizal fungi in a boreal forest. Soil Biology and Biochemistry, 2008, 40, 1964-1966.	8.8	10
110	Building bottomâ€up aggregateâ€based models (ABMs) in soil systems with a view of aggregates as biogeochemical reactors. Global Change Biology, 2019, 25, e6-e8.	9.5	10
111	Microbial community response to a decade of simulated global changes depends on the plant community. Elementa, 2021, 9, .	3.2	10
112	Drying and substrate concentrations interact to inhibit decomposition of carbon substrates added to combusted Inceptisols from a boreal forest. Biology and Fertility of Soils, 2015, 51, 525-533.	4.3	8
113	Carbon budgets for soil and plants respond to long-term warming in an Alaskan boreal forest. Biogeochemistry, 2020, 150, 345-353.	3.5	7
114	Quantum Dots Reveal Shifts in Organic Nitrogen Uptake by Fungi Exposed to Long-Term Nitrogen Enrichment. PLoS ONE, 2015, 10, e0138158.	2.5	7
115	Exploring Trait Trade-Offs for Fungal Decomposers in a Southern California Grassland. Frontiers in Microbiology, 2021, 12, 655987.	3.5	6
116	Phenotypic plasticity of fungal traits in response to moisture and temperature. ISME Communications, 2021, 1, .	4.2	6
117	A Bayesian approach to evaluation of soil biogeochemical models. Biogeosciences, 2020, 17, 4043-4057.	3.3	5
118	Physical Damage in Relation to Carbon Allocation Strategies of Tropical Forest Tree Saplings. Biotropica, 2004, 36, 410-413.	1.6	4
119	Climate-Driven Legacies in Simulated Microbial Communities Alter Litter Decomposition Rates. Frontiers in Ecology and Evolution, 2022, 10, .	2.2	4
120	Microbial extracellular enzyme activity with simulated climate change. Elementa, 2022, 10, .	3.2	4
121	Response to Steen and Ziervogel's comment on â€œOptimization of hydrolytic and oxidative enzyme methods to ecosystem studiesâ€•[Soil Biology & Biochemistry 43: 1387â€"1397]. Soil Biology and Biochemistry, 2012, 48, 198-199.	8.8	3
122	Trait relationships of fungal decomposers in response to drought using a dual field and laboratory approach. Ecosphere, 2022, 13, .	2.2	2
123	Testing microbial models with data from a 14C glucose tracer experiment. Soil Biology and Biochemistry, 2022, 172, 108781.	8.8	2
124	Functional Diversity in Resource Use By Fungi. Ecology, 2010, 91, 100319061621033.	3.2	1
125	Litter microbial respiration and enzymatic resistance to drought stress. Elementa, 2020, 8, .	3.2	1
126	Growth response of environmental bacteria under exposure to nitramines from CO2-capture. International Journal of Greenhouse Gas Control, 2018, 79, 248-251.	4.6	0

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127	Traits track taxonomy. Nature Ecology and Evolution, 2019, 3, 1001-1002.	7.8	0
128	Carbon Cycle Implications of Soil Microbial Interactions. Advances in Environmental Microbiology, 2019, , 1-29.	0.3	0