Steven D Allison

List of Publications by Citations

123 papers	18,640 citations	60 h-index	136 g-index
137 ext. papers	23,021 ext. citations	7.9 avg, IF	7.13 L-index

#	Paper	IF	Citations
123	Plant species traits are the predominant control on litter decomposition rates within biomes worldwide. *Ecology Letters*, **2008**, 11, 1065-71	10	1605
122	Colloquium paper: resistance, resilience, and redundancy in microbial communities. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105 Suppl 1, 11512-9	11.5	1594
121	Stoichiometry of soil enzyme activity at global scale. *Ecology Letters*, **2008**, 11, 1252-1264	10	1158
120	Soil-carbon response to warming dependent on microbial physiology. *Nature Geoscience*, **2010**, 3, 336-340	13.3	880
119	Fundamentals of microbial community resistance and resilience. *Frontiers in Microbiology*, **2012**, 3, 417	5.7	759
118	Responses of extracellular enzymes to simple and complex nutrient inputs. *Soil Biology and Biochemistry*, **2005**, 37, 937-944	7.5	651
117	Global soil carbon projections are improved by modelling microbial processes. *Nature Climate Change*, **2013**, 3, 909-912	21.4	580
116	Quantifying global soil carbon losses in response to warming. *Nature*, **2016**, 540, 104-108	50.4	560
115	Optimization of hydrolytic and oxidative enzyme methods for ecosystem studies. *Soil Biology and Biochemistry*, **2011**, 43, 1387-1397	7.5	505
114	Drivers of bacterial beta-diversity depend on spatial scale. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 7850-4	11.5	491
113	Causes of variation in soil carbon simulations from CMIP5 Earth system models and comparison with observations. *Biogeosciences*, **2013**, 10, 1717-1736	4.6	474
112	Warming and drying suppress microbial activity and carbon cycling in boreal forest soils. *Global Change Biology*, **2008**, 14, 2898-2909	11.4	382
111	Challenges in microbial ecology: building predictive understanding of community function and dynamics. *ISME Journal*, **2016**, 10, 2557-2568	11.9	380
110	Decomposers in disguise: mycorrhizal fungi as regulators of soil C dynamics in ecosystems under global change. *Functional Ecology*, **2008**, 22, 955-963	5.6	366
109	Cheaters, diffusion and nutrients constrain decomposition by microbial enzymes in spatially structured environments. *Ecology Letters*, **2005**, 8, 626-635	10	345
108	Modeling Soil Processes: Review, Key Challenges, and New Perspectives. *Vadose Zone Journal*, **2016**, 15, vzj2015.09.0131	2.7	311
107	Activities of extracellular enzymes in physically isolated fractions of restored grassland soils. *Soil Biology and Biochemistry*, **2006**, 38, 3245-3256	7.5	268

106	Rapid nutrient cycling in leaf litter from invasive plants in Hawai'i. *Oecologia*, **2004**, 141, 612-9	2.9	267
105	Microbial activity and soil respiration under nitrogen addition in Alaskan boreal forest. *Global Change Biology*, **2008**, 14, 1156-1168	11.4	260
104	Toward more realistic projections of soil carbon dynamics by Earth system models. *Global Biogeochemical Cycles*, **2016**, 30, 40-56	5.9	251
103	Microbial abundance and composition influence litter decomposition response to environmental change. *Ecology*, **2013**, 94, 714-25	4.6	251
102	A trait-based approach for modelling microbial litter decomposition. *Ecology Letters*, **2012**, 15, 1058-70	10	250
101	Plant traits and wood fates across the globe: rotted, burned, or consumed?. *Global Change Biology*, **2009**, 15, 2431-2449	11.4	244
100	The Michaelis–Menten kinetics of soil extracellular enzymes in response to temperature: a cross-latitudinal study. *Global Change Biology*, **2012**, 18, 1468-1479	11.4	232
99	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	11.5	206
98	Changes in soil organic carbon storage predicted by Earth system models during the 21st century. *Biogeosciences*, **2014**, 11, 2341-2356	4.6	201
97	Soil minerals and humic acids alter enzyme stability: implications for ecosystem processes. *Biogeochemistry*, **2006**, 81, 361-373	3.8	201
96	Nitrogen fertilization reduces diversity and alters community structure of active fungi in boreal ecosystems. *Soil Biology and Biochemistry*, **2007**, 39, 1878-1887	7.5	199
95	Explicitly representing soil microbial processes in Earth system models. *Global Biogeochemical Cycles*, **2015**, 29, 1782-1800	5.9	197
94	Accelerated microbial turnover but constant growth efficiency with warming in soil. *Nature Climate Change*, **2014**, 4, 903-906	21.4	192
93	Temperature sensitivity of soil enzyme kinetics under N-fertilization in two temperate forests. *Global Change Biology*, **2012**, 18, 1173-1184	11.4	174
92	Defining trait-based microbial strategies with consequences for soil carbon cycling under climate change. *ISME Journal*, **2020**, 14, 1-9	11.9	169
91	Low levels of nitrogen addition stimulate decomposition by boreal forest fungi. *Soil Biology and Biochemistry*, **2009**, 41, 293-302	7.5	150
90	A framework for representing microbial decomposition in coupled climate models. *Biogeochemistry* , **2012**, 109, 19-33	3.8	149
89	Fungal Taxa Target Different Carbon Sources in Forest Soil. *Ecosystems*, **2008**, 11, 1157-1167	3.9	141

88	Microdiversity of extracellular enzyme genes among sequenced prokaryotic genomes. *ISME Journal* , **2013**, 7, 1187-99	11.9	135
87	Microbial enzymatic responses to drought and to nitrogen addition in a southern California grassland. *Soil Biology and Biochemistry*, **2013**, 64, 68-79	7.5	133
86	Effects of dispersal and selection on stochastic assembly in microbial communities. *ISME Journal*, **2017**, 11, 176-185	11.9	128
85	Soil microbes and their response to experimental warming over time: A meta-analysis of field studies. *Soil Biology and Biochemistry*, **2017**, 107, 32-40	7.5	123
84	Radiocarbon constraints imply reduced carbon uptake by soils during the 21st century. *Science*, **2016**, 353, 1419-1424	33.3	119
83	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	7.5	115
82	Erosion and the Rejuvenation of Weathering-derived Nutrient Supply in an Old Tropical Landscape. *Ecosystems*, **2003**, 6, 762-772	3.9	105
81	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	11.5	103
80	Functional diversity in resource use by fungi. *Ecology*, **2010**, 91, 2324-32	4.6	101
79	Elemental stoichiometry of Fungi and Bacteria strains from grassland leaf litter. *Soil Biology and Biochemistry*, **2014**, 76, 278-285	7.5	99
78	Extracellular Enzyme Activities and Carbon Chemistry as Drivers of Tropical Plant Litter Decomposition. *Biotropica*, **2004**, 36, 285-296	2.3	99
77	Substrate concentration and enzyme allocation can affect rates of microbial decomposition. *Ecology*, **2011**, 92, 1471-80	4.6	96
76	Elevated enzyme activities in soils under the invasive nitrogen-fixing tree Falcataria moluccana. *Soil Biology and Biochemistry*, **2006**, 38, 1537-1544	7.5	92
75	Microbial response to simulated global change is phylogenetically conserved and linked with functional potential. *ISME Journal*, **2016**, 10, 109-18	11.9	80
74	Brown ground: a soil carbon analogue for the green world hypothesis?. *American Naturalist*, **2006**, 167, 619-27	3.7	80
73	Modeling adaptation of carbon use efficiency in microbial communities. *Frontiers in Microbiology*, **2014**, 5, 571	5.7	77
72	Microbial legacies alter decomposition in response to simulated global change. *ISME Journal*, **2017**, 11, 490-499	11.9	73
71	Soil carbon sensitivity to temperature and carbon use efficiency compared across microbial-ecosystem models of varying complexity. *Biogeochemistry*, **2014**, 119, 67-84	3.8	73

70	Ultraviolet photodegradation facilitates microbial litter decomposition in a Mediterranean climate. *Ecology*, **2015**, 96, 1994-2003	4.6	72
69	Biochemical responses of chestnut oak to a galling cynipid. *Journal of Chemical Ecology*, **2005**, 31, 151-66	2.7	72
68	Nitrogen alters carbon dynamics during early succession in boreal forest. *Soil Biology and Biochemistry*, **2010**, 42, 1157-1164	7.5	69
67	Evolutionary-Economic Principles as Regulators of Soil Enzyme Production and Ecosystem Function. *Soil Biology*, **2010**, 229-243	1	66
66	Climate change feedbacks to microbial decomposition in boreal soils. *Fungal Ecology*, **2011**, 4, 362-374	4.1	65
65	Resistance of microbial and soil properties to warming treatment seven years after boreal fire. *Soil Biology and Biochemistry*, **2010**, 42, 1872-1878	7.5	63
64	Effects of Drought Manipulation on Soil Nitrogen Cycling: A Meta-Analysis. *Journal of Geophysical Research G: Biogeosciences*, **2017**, 122, 3260-3272	3.7	61
63	Temporal variation overshadows the response of leaf litter microbial communities to simulated global change. *ISME Journal*, **2015**, 9, 2477-89	11.9	59
62	Environmental impacts on the diversity of methane-cycling microbes and their resultant function. *Frontiers in Microbiology*, **2013**, 4, 225	5.7	55
61	Ectomycorrhizal-dominated boreal and tropical forests have distinct fungal communities, but analogous spatial patterns across soil horizons. *PLoS ONE*, **2013**, 8, e68278	3.7	53
60	Substrate concentration constraints on microbial decomposition. *Soil Biology and Biochemistry*, **2014**, 79, 43-49	7.5	52
59	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, 1363-79	2.7	52
58	Soil aggregates as biogeochemical reactors and implications for soil-atmosphere exchange of greenhouse gases-A concept. *Global Change Biology*, **2019**, 25, 373-385	11.4	51
57	Phylogenetic constraints on elemental stoichiometry and resource allocation in heterotrophic marine bacteria. *Environmental Microbiology*, **2014**, 16, 1398-410	5.2	50
56	Cellulolytic potential under environmental changes in microbial communities from grassland litter. *Frontiers in Microbiology*, **2014**, 5, 639	5.7	48
55	The age distribution of global soil carbon inferred from radiocarbon measurements. *Nature Geoscience*, **2020**, 13, 555-559	18.3	47
54	Cooperation, competition, and coalitions in enzyme-producing microbes: social evolution and nutrient depolymerization rates. *Frontiers in Microbiology*, **2012**, 3, 338	5.7	46
53	Soil microbial communities with greater investment in resource acquisition have lower growth yield. *Soil Biology and Biochemistry*, **2019**, 132, 36-39	7.5	41

52	Consequences of drought tolerance traits for microbial decomposition in the DEMENT model. *Soil Biology and Biochemistry*, **2017**, 107, 104-113	7.5	40
51	Controls on the Temperature Sensitivity of Soil Enzymes: A Key Driver of In Situ Enzyme Activity Rates. *Soil Biology*, **2010**, 245-258	1	38
50	Temperature sensitivities of extracellular enzyme V and K across thermal environments. *Global Change Biology*, **2018**, 24, 2884-2897	11.4	36
49	Reduced carbon use efficiency and increased microbial turnover with soil warming. *Global Change Biology*, **2019**, 25, 900-910	11.4	36
48	Evaluating soil microbial carbon use efficiency explicitly as a function of cellular processes: implications for measurements and models. *Biogeochemistry*, **2018**, 140, 269-283	3.8	34
47	Fine-scale temporal variation in marine extracellular enzymes of coastal southern california. *Frontiers in Microbiology*, **2012**, 3, 301	5.7	32
46	Agroforestry Practices Promote Biodiversity and Natural Resource Diversity in Atlantic Nicaragua. *PLoS ONE*, **2016**, 11, e0162529	3.7	31
45	A model for variable phytoplankton stoichiometry based on cell protein regulation. *Biogeosciences*, **2013**, 10, 4341-4356	4.6	30
44	Drought and plant litter chemistry alter microbial gene expression and metabolite production. *ISME Journal*, **2020**, 14, 2236-2247	11.9	26
43	Extracellular enzyme kinetics and thermodynamics along a climate gradient in southern California. *Soil Biology and Biochemistry*, **2017**, 114, 82-92	7.5	25
42	Bacterial Tradeoffs in Growth Rate and Extracellular Enzymes. *Frontiers in Microbiology*, **2019**, 10, 2956	5.7	25
41	Extracellular enzyme production and cheating in Pseudomonas fluorescens depend on diffusion rates. *Frontiers in Microbiology*, **2014**, 5, 169	5.7	24
40	Meta-analysis of environmental impacts on nitrous oxide release in response to N amendment. *Frontiers in Microbiology*, **2012**, 3, 272	5.7	23
39	Embracing a new paradigm for temperature sensitivity of soil microbes. *Global Change Biology*, **2020**, 26, 3221-3229	11.4	22
38	Decomposition of recalcitrant carbon under experimental warming in boreal forest. *PLoS ONE*, **2017**, 12, e0179674	3.7	21
37	Interactive effects of precipitation manipulation and nitrogen addition on soil properties in California grassland and shrubland. *Applied Soil Ecology*, **2016**, 107, 144-153	5	21
36	Phylogenetic conservation of bacterial responses to soil nitrogen addition across continents. *Nature Communications*, **2019**, 10, 2499	17.4	20
35	Emergence of soil bacterial ecotypes along a climate gradient. *Environmental Microbiology*, **2018**, 20, 4112-4126	5.2	19

34	Precipitation regime drives warming responses of microbial biomass and activity in temperate steppe soils. *Biology and Fertility of Soils*, **2016**, 52, 469-477	6.1	18
33	Decreased mass specific respiration under experimental warming is robust to the microbial biomass method employed. *Ecology Letters*, **2009**, 12, E15-E18	10	18
32	Greenhouse gas fluxes under drought and nitrogen addition in a Southern California grassland. *Soil Biology and Biochemistry*, **2019**, 131, 19-27	7.5	18
31	Emergent properties of organic matter decomposition by soil enzymes. *Soil Biology and Biochemistry*, **2019**, 136, 107522	7.5	15
30	Resource allocation by the marine cyanobacterium Synechococcus WH8102 in response to different nutrient supply ratios. *Limnology and Oceanography*, **2015**, 60, 1634-1641	4.8	15
29	Phosphate supply explains variation in nucleic acid allocation but not C : P stoichiometry in the western North Atlantic. *Biogeosciences*, **2014**, 11, 1599-1611	4.6	13
28	Drought increases the frequencies of fungal functional genes related to carbon and nitrogen acquisition. *PLoS ONE*, **2018**, 13, e0206441	3.7	12
27	Crowther et al. reply. *Nature*, **2018**, 554, E7-E8	50.4	11
26	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	7.5	10
25	Uptake of an amino acid by ectomycorrhizal fungi in a boreal forest. *Soil Biology and Biochemistry*, **2008**, 40, 1964-1966	7.5	10
24	Microbial decomposers not constrained by climate history along a Mediterranean climate gradient in southern California. *Ecology*, **2018**, 99, 1441-1452	4.6	9
23	Building Predictive Models for Diverse Microbial Communities in Soil **2017**, 141-166		8
22	Carbon flux and forest dynamics: Increased deadwood decomposition in tropical rainforest tree-fall canopy gaps. *Global Change Biology*, **2021**, 27, 1601-1613	11.4	8
21	Temperature acclimation and adaptation of enzyme physiology in Neurospora discreta. *Fungal Ecology*, **2018**, 35, 78-86	4.1	7
20	Phylogenetic conservation of substrate use specialization in leaf litter bacteria. *PLoS ONE*, **2017**, 12, e0174472	3.7	7
19	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	6.1	6
18	Quantum Dots Reveal Shifts in Organic Nitrogen Uptake by Fungi Exposed to Long-Term Nitrogen Enrichment. *PLoS ONE*, **2015**, 10, e0138158	3.7	6
17	Defining trait-based microbial strategies with consequences for soil carbon cycling under climate change		6

16	Nitrogen enrichment shifts functional genes related to nitrogen and carbon acquisition in the fungal community. *Soil Biology and Biochemistry*, **2018**, 123, 87-96	7.5	6
15	Building bottom-up aggregate-based models (ABMs) in soil systems with a view of aggregates as biogeochemical reactors. *Global Change Biology*, **2019**, 25, e6-e8	11.4	5
14	Drought legacies mediated by trait trade-offs in soil microbiomes. *Ecosphere*, **2021**, 12, e03562	3.1	5
13	Physiological adaptations of leaf litter microbial communities to long-term drought		3
12	Response to Steen and Ziervogel's comment on Optimization of hydrolytic and oxidative enzyme methods to ecosystem studies[Soil Biology & Biochemistry 43: 1387–1397]. *Soil Biology and Biochemistry*, **2012**, 48, 198-199	7.5	2
11	Physical Damage in Relation to Carbon Allocation Strategies of Tropical Forest Tree Saplings. *Biotropica*, **2004**, 36, 410-413	2.3	2
10	Microbial community response to a decade of simulated global changes depends on the plant community. *Elementa*, **2021**, 9,	3.6	2
9	Microbes, memory and moisture: Predicting microbial moisture responses and their impact on carbon cycling. *Functional Ecology*,	5.6	2
8	Functional diversity in resource use by fungi **2010**, 91, 2324		1
7	A Bayesian approach to evaluation of soil biogeochemical models. *Biogeosciences*, **2020**, 17, 4043-4057	4.6	1
6	Exploring Trait Trade-Offs for Fungal Decomposers in a Southern California Grassland. *Frontiers in Microbiology*, **2021**, 12, 655987	5.7	1
5	Phenotypic plasticity of fungal traits in response to moisture and temperature. *ISME Communications*, **2021**, 1,		1
4	Carbon budgets for soil and plants respond to long-term warming in an Alaskan boreal forest. *Biogeochemistry*, **2020**, 150, 345-353	3.8	0
3	Traits track taxonomy. *Nature Ecology and Evolution*, **2019**, 3, 1001-1002	12.3	
2	Carbon Cycle Implications of Soil Microbial Interactions. *Advances in Environmental Microbiology*, **2019**, 1-29	1.3	
1	Growth response of environmental bacteria under exposure to nitramines from CO2-capture. *International Journal of Greenhouse Gas Control*, **2018**, 79, 248-251	4.2	