Matthew D Wallenstein

List of Publications by Year
in descending order

104	21,031	28736 57	39744 98
papers	citations	h-index	g-index

107	107	107	20217
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Distribution of soil organic matter fractions are altered with soil priming. Soil Biology and Biochemistry, 2022, 164, 108494.	4.2	16
2	Divergent belowground carbon allocation patterns of winter wheat shape rhizosphere microbial communities and nitrogen cycling activities. Soil Biology and Biochemistry, 2022, 165, 108518.	4.2	15
3	Addressing the soil carbon dilemma: Legumes in intensified rotations regenerate soil carbon while maintaining yields in semi-arid dryland wheat farms. Agriculture, Ecosystems and Environment, 2022, 330, 107906.	2.5	15
4	Rigorous, empirical, and quantitative: a proposed pipeline for soil health assessments. Soil Biology and Biochemistry, 2022, 170, 108710.	4.2	20
5	Ecosystem metabolomics of dissolved organic matter from arctic soil pore water across seasonal transitions. , 2022, , 91-106.		0
6	Long-term compost amendment modulates wheat genotype differences in belowground carbon allocation, microbial rhizosphere recruitment and nitrogen acquisition. Soil Biology and Biochemistry, 2022, 172, 108768.	4.2	10
7	<scp>I</scp>n<scp>âEN‐âEO</scp>ut: A hierarchical framework to understand and predict soil carbon storage and nitrogen recycling. Global Change Biology, 2021, 27, 4465-4468.	4.2	26
8	Microbial functional genes commonly respond to elevated carbon dioxide. Environment International, 2020, 144, 106068.	4.8	20
9	From Factory to Field: Effects of a Novel Soil Amendment Derived From Cheese Production on Wheat and Corn Production. Frontiers in Sustainable Food Systems, 2020, 3, .	1.8	4
10	Precision biochar and inoculum applications shift bacterial community structure and increase specific nutrient availability and maize yield. Applied Soil Ecology, 2020, 151, 103541.	2.1	4
11	River channel connectivity shifts metabolite composition and dissolved organic matter chemistry. Nature Communications, 2019, 10, 459.	5.8	62
12	Managing Agroecosystems for Soil Microbial Carbon Use Efficiency: Ecological Unknowns, Potential Outcomes, and a Path Forward. Frontiers in Microbiology, 2019, 10, 1146.	1.5	89
13	EcoFABs: advancing microbiome science through standardized fabricated ecosystems. Nature Methods, 2019, 16, 567-571.	9.0	90
14	Experimentally warmer and drier conditions in an Arctic plant community reveal microclimatic controls on senescence. Ecosphere, 2019, 10, e02677.	1.0	10
15	Unifying soil organic matter formation and persistence frameworks: the MEMS model. Biogeosciences, 2019, 16, 1225-1248.	1.3	81
16	Dissolved Organic Matter Chemistry and Transport Along an Arctic Tundra Hillslope. Global Biogeochemical Cycles, 2019, 33, 47-62.	1.9	12
17	A novel soil amendment for enhancing soil moisture retention and soil carbon in drought-prone soils. Geoderma, 2019, 337, 256-265.	2.3	20
18	Tracking the fate of fresh carbon in the Arctic tundra: Will shrub expansion alter responses of soil organic matter to warming?. Soil Biology and Biochemistry, 2018, 120, 134-144.	4.2	40

#	Article	IF	Citations
19	Catalytic power of enzymes decreases with temperature: New insights for understanding soil C cycling and microbial ecology under warming. Global Change Biology, 2018, 24, 4238-4250.	4.2	75
20	Soil bacterial community responses to altered precipitation and temperature regimes in an old field grassland are mediated by plants. FEMS Microbiology Ecology, 2018, 94, .	1.3	54
21	Soil carbon cycling proxies: Understanding their critical role in predicting climate change feedbacks. Global Change Biology, 2018, 24, 895-905.	4.2	61
22	Withinâ€species tradeâ€offs in plantâ€stimulated soil enzyme activity and growth, flowering, and seed size. Ecology and Evolution, 2018, 8, 11717-11724.	0.8	5
23	Understanding how microbiomes influence the systems they inhabit. Nature Microbiology, 2018, 3, 977-982.	5.9	169
24	Microbial Modulators and Mechanisms of Soil Carbon Storage. , 2018, , 73-115.		10
25	Plant traits, stoichiometry and microbes as drivers of decomposition in the rhizosphere in a temperate grassland. Journal of Ecology, 2017, 105, 1750-1765.	1.9	60
26	Managing and manipulating the rhizosphere microbiome for plant health: A systems approach. Rhizosphere, 2017, 3, 230-232.	1.4	105
27	Belowâ€ground connections underlying aboveâ€ground food production: a framework for optimising ecological connections in the rhizosphere. Journal of Ecology, 2017, 105, 913-920.	1.9	177
28	Tiny Microbes, Big Yields: enhancing food crop production with biological solutions. Microbial Biotechnology, 2017, 10, 999-1003.	2.0	119
29	Redox and temperature-sensitive changes in microbial communities and soil chemistry dictate greenhouse gas loss from thawed permafrost. Biogeochemistry, 2017, 134, 183-200.	1.7	22
30	Temperature Sensitivity as a Microbial Trait Using Parameters from Macromolecular Rate Theory. Frontiers in Microbiology, 2016, 7, 1821.	1.5	43
31	Elevated carbon dioxide accelerates the spatial turnover of soil microbial communities. Global Change Biology, 2016, 22, 957-964.	4.2	57
32	Earlier snowmelt and warming lead to earlier but not necessarily more plant growth. AoB PLANTS, 2016, 8, .	1.2	60
33	Temperature sensitivity of soil microbial communities: An application of macromolecular rate theory to microbial respiration. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 1420-1433.	1.3	41
34	Biochar and manure amendments impact soil nutrients and microbial enzymatic activities in a semi-arid irrigated maize cropping system. Agriculture, Ecosystems and Environment, 2016, 233, 404-414.	2.5	163
35	Progressing towards more quantitative analytical pyrolysis of soil organic matter using molecular beam mass spectroscopy of whole soils and added standards. Geoderma, 2016, 283, 88-100.	2.3	8
36	Opposing effects of different soil organic matter fractions on crop yields. Ecological Applications, 2016, 26, 2072-2085.	1.8	30

#	Article	IF	Citations
37	Moisture and temperature controls on nitrification differ among ammonia oxidizer communities from three alpine soil habitats. Frontiers of Earth Science, 2016, 10, 1-12.	0.9	26
38	Integrating legacy soil phosphorus into sustainable nutrient management strategies for future food, bioenergy and water security. Nutrient Cycling in Agroecosystems, 2016, 104, 393-412.	1.1	199
39	Phosphorus mobilizing consortium Mammoth P^{â„¢}enhances plant growth. PeerJ, 2016, 4, e2121.	0.9	46
40	Chemical Indicators of Cryoturbation and Microbial Processing throughout an Alaskan Permafrost Soil Depth Profile. Soil Science Society of America Journal, 2015, 79, 783-793.	1.2	30
41	Plant nitrogen uptake drives rhizosphere bacterial community assembly during plant growth. Soil Biology and Biochemistry, 2015, 85, 170-182.	4.2	137
42	Increased plant productivity and decreased microbial respiratory C loss by plant growth-promoting rhizobacteria under elevated CO2. Scientific Reports, 2015, 5, 9212.	1.6	63
43	Permafrost microbial community traits and functional diversity indicate low activity at in situ thaw temperatures. Soil Biology and Biochemistry, 2015, 87, 78-89.	4.2	32
44	Genomics in a changing arctic: critical questions await the molecular ecologist. Molecular Ecology, 2015, 24, 2301-2309.	2.0	10
45	Microbial activity is not always limited by nitrogen in Arctic tundra soils. Soil Biology and Biochemistry, 2015, 90, 52-61.	4.2	21
46	Linking microbial community structure and microbial processes: an empirical and conceptual overview. FEMS Microbiology Ecology, 2015, 91, fiv113.	1.3	143
47	Relationships between protein-encoding gene abundance and corresponding process are commonly assumed yet rarely observed. ISME Journal, 2015, 9, 1693-1699.	4.4	276
48	Soil respiration is not limited by reductions in microbial biomass during long-term soil incubations. Soil Biology and Biochemistry, 2015, 81, 304-310.	4.2	53
49	Soil microbial and nutrient responses to 7Âyears of seasonally altered precipitation in a Chihuahuan Desert grassland. Global Change Biology, 2014, 20, 1657-1673.	4.2	120
50	Soil bacterial community composition altered by increased nutrient availability in Arctic tundra soils. Frontiers in Microbiology, 2014, 5, 516.	1.5	188
51	Microbial Community-Level Responses to Warming and Altered Precipitation Patterns Determine Terrestrial Carbon-Climate Feedbacks. , 2014, , 349-354.		1
52	Soil aggregate size distribution mediates microbial climate change feedbacks. Soil Biology and Biochemistry, 2014, 68, 357-365.	4.2	102
53	Extracellular enzymes in terrestrial, freshwater, and marine environments: perspectives on system variability and common research needs. Biogeochemistry, 2014, 117, 5-21.	1.7	146
54	New insights into enzymes in the environment. Biogeochemistry, 2014, 117, 1-4.	1.7	11

#	Article	IF	Citations
55	Rhizosphere stoichiometry: are CÂ:ÂNÂ:ÂP ratios of plants, soils, and enzymes conserved at the plant speciesâ€level?. New Phytologist, 2014, 201, 505-517.	3.5	187
56	Predicted responses of arctic and alpine ecosystems to altered seasonality under climate change. Global Change Biology, 2014, 20, 3256-3269.	4.2	297
57	Climate change alters ecological strategies of soil bacteria. Ecology Letters, 2014, 17, 155-164.	3.0	340
58	Is bacterial moisture niche a good predictor of shifts in community composition under longâ€term drought?. Ecology, 2014, 95, 110-122.	1.5	97
59	Vascular plants mediate the effects of aridity and soil properties on ammonia-oxidizing bacteria and archaea. FEMS Microbiology Ecology, 2013, 85, 273-282.	1.3	28
60	The <scp>M</scp>icrobial <scp>E</scp>fficiencyâ€<scp>M</scp>atrix <scp>S</scp>tabilization (<scp>MEMS</scp>) framework integrates plant litter decomposition with soil organic matter stabilization: do labile plant inputs form stable soil organic matter?. Global Change Biology, 2013, 19, 988-995.	4.2	1,962
61	Decoupling of soil nutrient cycles as a function of aridity in global drylands. Nature, 2013, 502, 672-676.	13.7	733
62	Soil enzymes in a changing environment: Current knowledge and future directions. Soil Biology and Biochemistry, 2013, 58, 216-234.	4.2	1,535
63	Litter chemistry changes more rapidly when decomposed at home but converges during decompositionâ€“transformation. Soil Biology and Biochemistry, 2013, 57, 311-319.	4.2	102
64	Positive climate feedbacks of soil microbial communities in a semiâ€arid grassland. Ecology Letters, 2013, 16, 234-241.	3.0	141
65	High-throughput Fluorometric Measurement of Potential Soil Extracellular Enzyme Activities. Journal of Visualized Experiments, 2013, , e50961.	0.2	190
66	Microbial responses to multi-factor climate change: effects on soil enzymes. Frontiers in Microbiology, 2013, 4, 146.	1.5	164
67	Aridity Modulates N Availability in Arid and Semiarid Mediterranean Grasslands. PLoS ONE, 2013, 8, e59807.	1.1	42
68	Carbon-Degrading Enzyme Activities Stimulated by Increased Nutrient Availability in Arctic Tundra Soils. PLoS ONE, 2013, 8, e77212.	1.1	44
69	Microbes in thawing permafrost: the unknown variable in the climate change equation. ISME Journal, 2012, 6, 709-712.	4.4	153
70	Bridging the gap between modelers and experimentalists. Eos, 2012, 93, 312-312.	0.1	3
71	Soil microbial community response to drying and rewetting stress: does historical precipitation regime matter?. Biogeochemistry, 2012, 109, 101-116.	1.7	360
72	A trait-based framework for predicting when and where microbial adaptation to climate change will affect ecosystem functioning. Biogeochemistry, 2012, 109, 35-47.	1.7	297

#	Article	IF	Citations
73	Effects of soil moisture on the temperature sensitivity of heterotrophic respiration vary seasonally in an oldâ€field climate change experiment. Global Change Biology, 2012, 18, 336-348.	4.2	367
74	A litter-slurry technique elucidates the key role of enzyme production and microbial dynamics in temperature sensitivity of organic matter decomposition. Soil Biology and Biochemistry, 2012, 47, 18-26.	4.2	50
75	Modeling the effects of temperature and moisture on soil enzyme activity: Linking laboratory assays to continuous field data. Soil Biology and Biochemistry, 2012, 55, 85-92.	4.2	219
76	Differential Growth Responses of Soil Bacterial Taxa to Carbon Substrates of Varying Chemical Recalcitrance. Frontiers in Microbiology, 2011, 2, 94.	1.5	504
77	Temperature and soil organic matter decomposition rates - synthesis of current knowledge and a way forward. Global Change Biology, 2011, 17, 3392-3404.	4.2	1,143
78	A cross-seasonal comparison of active and total bacterial community composition in Arctic tundra soil using bromodeoxyuridine labeling. Soil Biology and Biochemistry, 2011, 43, 287-295.	4.2	83
79	Responses and feedbacks of coupled biogeochemical cycles to climate change: examples from terrestrial ecosystems. Frontiers in Ecology and the Environment, 2011, 9, 61-67.	1.9	214
80	Soil Respiration and Student Inquiry: A Perfect Match. Science Activities, 2011, 48, 119-128.	0.4	1
81	Watershed Urbanization Alters the Composition and Function of Stream Bacterial Communities. PLoS ONE, 2011, 6, e22972.	1.1	57
82	Decomposition of aspen leaf litter results in unique metabolomes when decomposed under different tree species. Soil Biology and Biochemistry, 2010, 42, 484-490.	4.2	53
83	Moisture availability influences the effect of ultravioletâ€B radiation on leaf litter decomposition. Global Change Biology, 2010, 16, 484-495.	4.2	81
84	Soil-carbon response to warming dependent on microbial physiology. Nature Geoscience, 2010, 3, 336-340.	5.4	1,192
85	Controls on the Temperature Sensitivity of Soil Enzymes: A Key Driver of In Situ Enzyme Activity Rates. Soil Biology, 2010, , 245-258.	0.6	63
86	Home-field advantage accelerates leaf litter decomposition in forests. Soil Biology and Biochemistry, 2009, 41, 606-610.	4.2	409
87	Seasonal variation in enzyme activities and temperature sensitivities in Arctic tundra soils. Global Change Biology, 2009, 15, 1631-1639.	4.2	296
88	Decreased mass specific respiration under experimental warming is robust to the microbial biomass method employed. Ecology Letters, 2009, 12, E15.	3.0	19
89	Tree Species Traits Influence Soil Physical, Chemical, and Biological Properties in High Elevation Forests. PLoS ONE, 2009, 4, e5964.	1.1	96
90	Microbial growth in Arctic tundra soil at â^'2Â°C. Environmental Microbiology Reports, 2009, 1, 162-166.	1.0	56

#	Article	IF	Citations
91	Fungal Taxa Target Different Carbon Sources in Forest Soil. Ecosystems, 2008, 11, 1157-1167.	1.6	174
92	Stoichiometry of soil enzyme activity at global scale. Ecology Letters, 2008, 11, 1252-1264.	3.0	1,684
93	Thermal adaptation of soil microbial respiration to elevated temperature. Ecology Letters, 2008, 11, 1316-1327.	3.0	690
94	Emerging tools for measuring and modeling the in situ activity of soil extracellular enzymes. Soil Biology and Biochemistry, 2008, 40, 2098-2106.	4.2	278
95	MICROBIAL STRESS-RESPONSE PHYSIOLOGY AND ITS IMPLICATIONS FOR ECOSYSTEM FUNCTION. Ecology, 2007, 88, 1386-1394.	1.5	1,935
96	Bacterial and fungal community structure in Arctic tundra tussock and shrub soils. FEMS Microbiology Ecology, 2007, 59, 428-435.	1.3	221
97	Nitrogen fertilization decreases forest soil fungal and bacterial biomass in three long-term experiments. Forest Ecology and Management, 2006, 222, 459-468.	1.4	267
98	Terrestrial ecosystem processes of Victoria Land, Antarctica. Soil Biology and Biochemistry, 2006, 38, 3019-3034.	4.2	119
99	N FERTILIZATION EFFECTS ON DENITRIFICATION AND N CYCLING IN AN AGGRADING FOREST. , 2006, 16, 2168-2176.		32
100	ENVIRONMENTAL CONTROLS ON DENITRIFYING COMMUNITIES AND DENITRIFICATION RATES: INSIGHTS FROM MOLECULAR METHODS. , 2006, 16, 2143-2152.		405
101	Quantitative analyses of nitrogen cycling genes in soils. Pedobiologia, 2005, 49, 665-672.	0.5	87
102	COMMUNITY COMPOSITION AND PHOTOSYNTHESIS BY PHOTOAUTOTROPHS UNDER QUARTZ PEBBLES, SOUTHERN MOJAVE DESERT. Ecology, 2003, 84, 3222-3231.	1.5	107
103	Effects of Invasion of Pinus virginiana on Soil Properties in Serpentine Barrens in Southeastern Pennsylvania. Journal of the Torrey Botanical Society, 1997, 124, 297.	0.1	30
104	Ecology of Extracellular Enzyme Activities and Organic Matter Degradation in Soil: A Complex Community-Driven Process. Soil Science Society of America Book Series, 0, , 35-55.	0.3	26