James C Stegen

List of Publications by Year
in descending order

115 papers	14,596 citations	61984 43 h-index	22832 112 g-index
153 all docs	153 docs citations	153 times ranked	16271 citing authors

#	Article	IF	Citations
1	Distinct and Temporally Stable Assembly Mechanisms Shape Bacterial and Fungal Communities in Vineyard Soils. Microbial Ecology, 2023, 86, 337-349.	2.8	6
2	ORT: a workflow linking genome-scale metabolic models with reactive transport codes. Bioinformatics, 2022, 38, 778-784.	4.1	2
3	The ecological assembly of bacterial communities in Antarctic wetlands varies across levels of phylogenetic resolution. Environmental Microbiology, 2022, , .	3.8	1
4	Implications of sample treatment on characterization of riverine dissolved organic matter. Environmental Sciences: Processes and Impacts, 2022, 24, 773-782.	3.5	6
5	Inferring the Contribution of Microbial Taxa and Organic Matter Molecular Formulas to Ecological Assembly. Frontiers in Microbiology, 2022, 13, 803420.	3.5	5
6	Integrated, Coordinated, Open, and Networked (ICON) Science to Advance the Geosciences: Introduction and Synthesis of a Special Collection of Commentary Articles. Earth and Space Science, 2022, 9, .	2.6	14
7	Movement with meaning: integrating information into metaâ€ecology. Oikos, 2022, 2022, .	2.7	12
8	Advancing river corridor science beyond disciplinary boundaries with an inductive approach to catalyse hypothesis generation. Hydrological Processes, 2022, 36, .	2.6	7
9	Dissolved oxygen sensor in an automated hyporheic sampling system reveals biogeochemical dynamics. , 2022, 1, e0000014.		0
10	Disinfection byproducts formed during drinking water treatment reveal an export control point for dissolved organic matter in a subalpine headwater stream. Water Research X, 2022, 15, 100144.	6.1	7
11	Hot Spots and Hot Moments in the Critical Zone: Identification of and Incorporation into Reactive Transport Models. , 2022, , 9-47.		7
12	It Takes a Village: Using a Crowdsourced Approach to Investigate Organic Matter Composition in Global Rivers Through the Lens of Ecological Theory. Frontiers in Water, 2022, 4, .	2.3	3
13	Riverbed Temperature and 4D ERT Monitoring Reveals Heterogenous Horizontal and Vertical Groundwater-Surface Water Exchange Flows Under Dynamic Stage Conditions. Frontiers in Earth Science, 2022, 10, .	1.8	1
14	Continentalâ€scale niche differentiation of dominant topsoil archaea in drylands. Environmental Microbiology, 2022, 24, 5483-5497.	3.8	3
15	Microbial and Environmental Processes Shape the Link between Organic Matter Functional Traits and Composition. Environmental Science & Technology, 2022, 56, 10504-10516.	10.0	27
16	Organic matter transformations are disconnected between surface water and the hyporheic zone. Biogeosciences, 2022, 19, 3099-3110.	3.3	4
17	Integrating field observations and process-based modeling to predict watershed water quality under environmental perturbations. Journal of Hydrology, 2021, 602, 125762.	5.4	22
18	A genomic catalog of Earthâ€™s microbiomes. Nature Biotechnology, 2021, 39, 499-509.	17.5	457

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19	Small streams dominate US tidal reaches and will be disproportionately impacted by sea-level rise. Science of the Total Environment, 2021, 753, 141944.	8.0	7
20	Special Collection on Open Collaboration Across Geosciences. Eos, 2021, 102, .	0.1	20
21	Coupled Biotic-Abiotic Processes Control Biogeochemical Cycling of Dissolved Organic Matter in the Columbia River Hyporheic Zone. Frontiers in Water, 2021, 2, .	2.3	18
22	Antecedent conditions determine the biogeochemical response of coastal soils to seawater exposure. Soil Biology and Biochemistry, 2021, 153, 108104.	8.8	7
23	Historical Contingency in Microbial Resilience to Hydrologic Perturbations. Frontiers in Water, 2021, 3, .	2.3	2
24	Evaluating a Laboratory Flume Microbiome as a Window Into Natural Riverbed Biogeochemistry. Frontiers in Water, 2021, 3, .	2.3	3
25	Sample Identifiers and Metadata to Support Data Management and Reuse in Multidisciplinary Ecosystem Sciences. Data Science Journal, 2021, 20, 11.	1.3	11
26	Assembly of the Populus Microbiome Is Temporally Dynamic and Determined by Selective and Stochastic Factors. MSphere, 2021, 6, e0131620.	2.9	25
27	Disturbance triggers non-linear microbeâ€“environment feedbacks. Biogeosciences, 2021, 18, 4773-4789.	3.3	8
28	Amount and reactivity of dissolved organic matter export are affected by land cover change from oldâ€growth to secondâ€growth forests in headwater ecosystems. Hydrological Processes, 2021, 35, e14343.	2.6	3
29	A novel construct for scaling groundwaterâ€“river interactions based on machine-guided hydromorphic classification. Environmental Research Letters, 2021, 16, 104016.	5.2	1
30	Ecological theory applied to environmental metabolomes reveals compositional divergence despite conserved molecular properties. Science of the Total Environment, 2021, 788, 147409.	8.0	21
31	Contrasting Community Assembly Forces Drive Microbial Structural and Potential Functional Responses to Precipitation in an Incipient Soil System. Frontiers in Microbiology, 2021, 12, 754698.	3.5	4
32	TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188.	9.5	1,038
33	Temperature drives local contributions to beta diversity in mountain streams: Stochastic and deterministic processes. Global Ecology and Biogeography, 2020, 29, 420-432.	5.8	30
34	Tree growth, transpiration, and water-use efficiency between shoreline and upland red maple (Acer) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	4.8	7
35	Representing Organic Matter Thermodynamics in Biogeochemical Reactions via Substrate-Explicit Modeling. Frontiers in Microbiology, 2020, 11, 531756.	3.5	27
36	Using Community Science to Reveal the Global Chemogeography of River Metabolomes. Metabolites, 2020, 10, 518.	2.9	27

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37	Using metacommunity ecology to understand environmental metabolomes. Nature Communications, 2020, 11, 6369.	12.8	51
38	Carbon Limitation Leads to Thermodynamic Regulation of Aerobic Metabolism. Environmental Science and Technology Letters, 2020, 7, 517-524.	8.7	32
39	Straw chemistry links the assembly of bacterial communities to decomposition in paddy soils. Soil Biology and Biochemistry, 2020, 148, 107866.	8.8	49
40	Distinct assembly mechanisms underlie similar biogeographical patterns of rare and abundant bacteria in Tibetan Plateau grassland soils. Environmental Microbiology, 2020, 22, 2261-2272.	3.8	77
41	Localized basal area affects soil respiration temperature sensitivity in a coastal deciduous forest. Biogeosciences, 2020, 17, 771-780.	3.3	5
42	Ecological Assembly Processes Are Coordinated between Bacterial and Viral Communities in Fractured Shale Ecosystems. MSystems, 2020, 5, .	3.8	15
43	Distinct temporal diversity profiles for nitrogen cycling genes in a hyporheic microbiome. PLoS ONE, 2020, 15, e0228165.	2.5	12
44	Methane and nitrous oxide porewater concentrations and surface fluxes of a regulated river. Science of the Total Environment, 2020, 715, 136920.	8.0	20
45	A Flux Detection Probe to Quantify Dynamic Groundwaterâ€Surface Water Exchange in the Hyporheic Zone. Ground Water, 2020, 58, 892-900.	1.3	8
46	Active layer depth and soil properties impact specific leaf area variation and ecosystem productivity in a boreal forest. PLoS ONE, 2020, 15, e0232506.	2.5	8
47	Spatial gradients in the characteristics of soil-carbon fractions are associated with abiotic features but not microbial communities. Biogeosciences, 2019, 16, 3911-3928.	3.3	19
48	Forfeiting the priority effect: turnover defines biofilm community succession. ISME Journal, 2019, 13, 1865-1877.	9.8	83
49	Assessing Microbial Community Patterns During Incipient Soil Formation From Basalt. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 941-958.	3.0	16
50	Spatial and temporal variation in river corridor exchange across a 5th-order mountain stream network. Hydrology and Earth System Sciences, 2019, 23, 5199-5225.	4.9	23
51	Subsurface biogeochemistry is a missing link between ecology and hydrology in dam-impacted river corridors. Science of the Total Environment, 2019, 657, 435-445.	8.0	19
52	Co-located contemporaneous mapping of morphological, hydrological, chemical, and biological conditions in a 5th-order mountain stream network, Oregon, USA. Earth System Science Data, 2019, 11, 1567-1581.	9.9	14
53	Soil pH mediates the balance between stochastic and deterministic assembly of bacteria. ISME Journal, 2018, 12, 1072-1083.	9.8	591
54	Riverbed Hydrologic Exchange Dynamics in a Large Regulated River Reach. Water Resources Research, 2018, 54, 2715-2730.	4.2	17

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55	Influences of organic carbon speciation on hyporheic corridor biogeochemistry and microbial ecology. Nature Communications, 2018, 9, 585.	12.8	110
56	WHONDRS: a Community Resource for Studying Dynamic River Corridors. MSystems, 2018, 3, .	3.8	22
57	Drought Conditions Maximize the Impact of Highâ€Frequency Flow Variations on Thermal Regimes and Biogeochemical Function in the Hyporheic Zone. Water Resources Research, 2018, 54, 7361-7382.	4.2	63
58	Two key features influencing community assembly processes at regional scale: Initial state and degree of change in environmental conditions. Molecular Ecology, 2018, 27, 5238-5251.	3.9	147
59	At the Nexus of History, Ecology, and Hydrobiogeochemistry: Improved Predictions across Scales through Integration. MSystems, 2018, 3, .	3.8	5
60	A unified conceptual framework for prediction and control of microbiomes. Current Opinion in Microbiology, 2018, 44, 20-27.	5.1	42
61	Multi 'omics comparison reveals metabolome biochemistry, not microbiome composition or gene expression, corresponds to elevated biogeochemical function in the hyporheic zone. Science of the Total Environment, 2018, 642, 742-753.	8.0	60
62	Dispersal limitation and thermodynamic constraints govern spatial structure of permafrost microbial communities. FEMS Microbiology Ecology, 2018, 94, .	2.7	62
63	Nearly a decadeâ€long repeatable seasonal diversity patterns of bacterioplankton communities in the eutrophic Lake Donghu (Wuhan, China). Molecular Ecology, 2017, 26, 3839-3850.	3.9	76
64	Colonization Habitat Controls Biomass, Composition, and Metabolic Activity of Attached Microbial Communities in the Columbia River Hyporheic Corridor. Applied and Environmental Microbiology, 2017, 83, .	3.1	20
65	Autogenic succession and deterministic recovery following disturbance in soil bacterial communities. Scientific Reports, 2017, 7, 45691.	3.3	71
66	Deterministic influences exceed dispersal effects on hydrologicallyâ€connected microbiomes. Environmental Microbiology, 2017, 19, 1552-1567.	3.8	143
67	Geochemical and Microbial Community Attributes in Relation to Hyporheic Zone Geological Facies. Scientific Reports, 2017, 7, 12006.	3.3	40
68	Long-term nitrogen addition affects the phylogenetic turnover of soil microbial community responding to moisture pulse. Scientific Reports, 2017, 7, 17492.	3.3	79
69	Dispersal-Based Microbial Community Assembly Decreases Biogeochemical Function. Processes, 2017, 5, 65.	2.8	93
70	Regulation-Structured Dynamic Metabolic Model Provides a Potential Mechanism for Delayed Enzyme Response in Denitrification Process. Frontiers in Microbiology, 2017, 8, 1866.	3.5	40
71	Soil respiration across aÂpermafrost transition zone: spatial structure and environmental correlates. Biogeosciences, 2017, 14, 4341-4354.	3.3	7
72	Biogeochemical cycling at the aquaticâ€“terrestrial interface is linked to parafluvial hyporheic zone inundation history. Biogeosciences, 2017, 14, 4229-4241.	3.3	25

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73	Carbon Inputs From Riparian Vegetation Limit Oxidation of Physically Bound Organic Carbon Via Biochemical and Thermodynamic Processes. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 3188-3205.	3.0	58
74	Aligning the Measurement of Microbial Diversity with Macroecological Theory. Frontiers in Microbiology, 2016, 7, 1487.	3.5	13
75	Coupling Spatiotemporal Community Assembly Processes to Changes in Microbial Metabolism. Frontiers in Microbiology, 2016, 7, 1949.	3.5	87
76	Spatial and successional dynamics of microbial biofilm communities in a grassland stream ecosystem. Molecular Ecology, 2016, 25, 4674-4688.	3.9	59
77	Seasonal hyporheic dynamics control coupled microbiology and geochemistry in Colorado River sediments. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 2976-2987.	3.0	49
78	Coupling among Microbial Communities, Biogeochemistry and Mineralogy across Biogeochemical Facies. Scientific Reports, 2016, 6, 30553.	3.3	26
79	Groundwaterâ€“surface water mixing shifts ecological assembly processes and stimulates organic carbon turnover. Nature Communications, 2016, 7, 11237.	12.8	290
80	Estimating and mapping ecological processes influencing microbial community assembly. Frontiers in Microbiology, 2015, 6, 370.	3.5	578
81	The reduced genomes of Parcubacteria (OD1) contain signatures of a symbiotic lifestyle. Frontiers in Microbiology, 2015, 6, 713.	3.5	280
82	Relative Roles of Deterministic and Stochastic Processes in Driving the Vertical Distribution of Bacterial Communities in a Permafrost Core from the Qinghai-Tibet Plateau, China. PLoS ONE, 2015, 10, e0145747.	2.5	44
83	Disentangling mechanisms that mediate the balance between stochastic and deterministic processes in microbial succession. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E1326-32.	7.1	972
84	The Gut Microbiota of Rural Papua New Guineans: Composition, Diversity Patterns, and Ecological Processes. Cell Reports, 2015, 11, 527-538.	6.4	475
85	On the processes generating latitudinal richness gradients: identifying diagnostic patterns and predictions. Frontiers in Genetics, 2014, 5, 420.	2.3	27
86	When should species richness be energy limited, and how would we know?. Ecology Letters, 2014, 17, 401-413.	6.4	107
87	Linking microbial community structure to Î²-glucosidic function in soil aggregates. ISME Journal, 2013, 7, 2044-2053.	9.8	110
88	Quantifying community assembly processes and identifying features that impose them. ISME Journal, 2013, 7, 2069-2079.	9.8	1,354
89	Stochastic and deterministic drivers of spatial and temporal turnover in breeding bird communities. Global Ecology and Biogeography, 2013, 22, 202-212.	5.8	121
90	Phylogenetic beta diversity in bacterial assemblages across ecosystems: deterministic versus stochastic processes. ISME Journal, 2013, 7, 1310-1321.	9.8	515

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91	An empirical assessment of tree branching networks and implications for plant allometric scaling models. Ecology Letters, 2013, 16, 1069-1078.	6.4	89
92	Correlations between physical and chemical defences in plants: tradeoffs, syndromes, or just many different ways to skin a herbivorous cat?. New Phytologist, 2013, 198, 252-263.	7.3	124
93	The epsomitic phototrophic microbial mat of Hot Lake, Washington: community structural responses to seasonal cycling. Frontiers in Microbiology, 2013, 4, 323.	3.5	75
94	Evolving ecological networks and the emergence of biodiversity patterns across temperature gradients. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 1051-1060.	2.6	40
95	Dispersal, environmental niches and oceanic-scale turnover in deep-sea bivalves. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 1993-2002.	2.6	54
96	Interannual variability of growth and reproduction in Bursera simaruba: the role of allometry and resource variability. Ecology, 2012, 93, 180-190.	3.2	19
97	Response to Comments on â€œDisentangling the Drivers of Î² Diversity Along Latitudinal and Elevational Gradientsâ€. Science, 2012, 335, 1573-1573.	12.6	8
98	Eco-Evolutionary Community Dynamics: Covariation between Diversity and Invasibility across Temperature Gradients. American Naturalist, 2012, 180, E110-E126.	2.1	9
99	Testing the metabolic theory of ecology. Ecology Letters, 2012, 15, 1465-1474.	6.4	155
100	Stochastic and deterministic assembly processes in subsurface microbial communities. ISME Journal, 2012, 6, 1653-1664.	9.8	1,203
101	Temporal turnover in the composition of tropical tree communities: functional determinism and phylogenetic stochasticity. Ecology, 2012, 93, 490-499.	3.2	168
102	The biogeography and filtering of woody plant functional diversity in North and South America. Global Ecology and Biogeography, 2012, 21, 798-808.	5.8	235
103	Navigating the multiple meanings of Î² diversity: a roadmap for the practicing ecologist. Ecology Letters, 2011, 14, 19-28.	6.4	1,899
104	Variation in above-ground forest biomass across broad climatic gradients. Global Ecology and Biogeography, 2011, 20, 744-754.	5.8	195
105	Putting plant resistance traits on the map: a test of the idea that plants are better defended at lower latitudes. New Phytologist, 2011, 191, 777-788.	7.3	155
106	Disentangling the Drivers of Î² Diversity Along Latitudinal and Elevational Gradients. Science, 2011, 333, 1755-1758.	12.6	617
107	Trophic ecology of an aquatic mite (Piona carnea) preying on Daphnia pulex: effects of predator density, nutrient supply and a second predator (Chaoborus americanus). Hydrobiologia, 2011, 668, 171-182.	2.0	1
108	Inferring Ecological Processes from Taxonomic, Phylogenetic and Functional Trait Î²-Diversity. PLoS ONE, 2011, 6, e20906.	2.5	69

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109	Integrating elements and energy through the metabolic dependencies of gross growth efficiency and the threshold elemental ratio. Oikos, 2010, 119, 752.	2.7	0
110	Integrating elements and energy through the metabolic dependencies of gross growth efficiency and the threshold elemental ratio. Oikos, 2010, 119, 752-765.	2.7	51
111	Functional trait assembly through ecological and evolutionary time. Theoretical Ecology, 2009, 2, 239-250.	1.0	19
112	Advancing the metabolic theory of biodiversity. Ecology Letters, 2009, 12, 1001-1015.	6.4	68
113	Aboveâ€ground forest biomass is not consistently related to wood density in tropical forests. Global Ecology and Biogeography, 2009, 18, 617-625.	5.8	46
114	On the relationship between mass and diameter distributions in tree communities. Ecology Letters, 2008, 11, 1287-1293.	6.4	13
115	The control of color change in the Pacific tree frog, Hyla regilla. Canadian Journal of Zoology, 2004, 82, 889-896.	1.0	39