# James C Stegen

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 115 papers | 14,596 citations | 61857 43 h-index | 22764 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. | 1.4 | 6 |
| 2 | ORT: a workflow linking genome-scale metabolic models with reactive transport codes. Bioinformatics, 2022, 38, 778-784. | 1.8 | 2 |
| 3 | The ecological assembly of bacterial communities in Antarctic wetlands varies across levels of phylogenetic resolution. Environmental Microbiology, 2022, , . | 1.8 | 1 |
| 4 | Implications of sample treatment on characterization of riverine dissolved organic matter. Environmental Sciences: Processes and Impacts, 2022, 24, 773-782. | 1.7 | 6 |
| 5 | Inferring the Contribution of Microbial Taxa and Organic Matter Molecular Formulas to Ecological Assembly. Frontiers in Microbiology, 2022, 13, 803420. | 1.5 | 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, . | 1.1 | 14 |
| 7 | Movement with meaning: integrating information into metaâ€ecology. Oikos, 2022, 2022, . | 1.2 | 12 |
| 8 | Advancing river corridor science beyond disciplinary boundaries with an inductive approach to catalyse hypothesis generation. Hydrological Processes, 2022, 36, . | 1.1 | 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. | 2.8 | 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, . | 1.0 | 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, . | 0.8 | 1 |
| 14 | Continentalâ€scale niche differentiation of dominant topsoil archaea in drylands. Environmental Microbiology, 2022, 24, 5483-5497. | 1.8 | 3 |
| 15 | Microbial and Environmental Processes Shape the Link between Organic Matter Functional Traits and Composition. Environmental Science & Technology, 2022, 56, 10504-10516. | 4.6 | 27 |
| 16 | Organic matter transformations are disconnected between surface water and the hyporheic zone. Biogeosciences, 2022, 19, 3099-3110. | 1.3 | 4 |
| 17 | Integrating field observations and process-based modeling to predict watershed water quality under environmental perturbations. Journal of Hydrology, 2021, 602, 125762. | 2.3 | 22 |
| 18 | A genomic catalog of Earthâ€™s microbiomes. Nature Biotechnology, 2021, 39, 499-509. | 9.4 | 457 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Small streams dominate US tidal reaches and will be disproportionately impacted by sea-level rise. Science of the Total Environment, 2021, 753, 141944. | 3.9 | 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, . | 1.0 | 18 |
| 22 | Antecedent conditions determine the biogeochemical response of coastal soils to seawater exposure. Soil Biology and Biochemistry, 2021, 153, 108104. | 4.2 | 7 |
| 23 | Historical Contingency in Microbial Resilience to Hydrologic Perturbations. Frontiers in Water, 2021, 3, . | 1.0 | 2 |
| 24 | Evaluating a Laboratory Flume Microbiome as a Window Into Natural Riverbed Biogeochemistry. Frontiers in Water, 2021, 3, . | 1.0 | 3 |
| 25 | Sample Identifiers and Metadata to Support Data Management and Reuse in Multidisciplinary Ecosystem Sciences. Data Science Journal, 2021, 20, 11. | 0.6 | 11 |
| 26 | Assembly of the Populus Microbiome Is Temporally Dynamic and Determined by Selective and Stochastic Factors. MSphere, 2021, 6, e0131620. | 1.3 | 25 |
| 27 | Disturbance triggers non-linear microbeâ€“environment feedbacks. Biogeosciences, 2021, 18, 4773-4789. | 1.3 | 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. | 1.1 | 3 |
| 29 | A novel construct for scaling groundwaterâ€“river interactions based on machine-guided hydromorphic classification. Environmental Research Letters, 2021, 16, 104016. | 2.2 | 1 |
| 30 | Ecological theory applied to environmental metabolomes reveals compositional divergence despite conserved molecular properties. Science of the Total Environment, 2021, 788, 147409. | 3.9 | 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. | 1.5 | 4 |
| 32 | TRY plant trait database â€“ enhanced coverage and open access. Global Change Biology, 2020, 26, 119-188. | 4.2 | 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. | 2.7 | 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 | 1.9 | 7 |
| 35 | Representing Organic Matter Thermodynamics in Biogeochemical Reactions via Substrate-Explicit Modeling. Frontiers in Microbiology, 2020, 11, 531756. | 1.5 | 27 |
| 36 | Using Community Science to Reveal the Global Chemogeography of River Metabolomes. Metabolites, 2020, 10, 518. | 1.3 | 27 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | Using metacommunity ecology to understand environmental metabolomes. Nature Communications, 2020, 11, 6369. | 5.8 | 51 |
| 38 | Carbon Limitation Leads to Thermodynamic Regulation of Aerobic Metabolism. Environmental Science and Technology Letters, 2020, 7, 517-524. | 3.9 | 32 |
| 39 | Straw chemistry links the assembly of bacterial communities to decomposition in paddy soils. Soil Biology and Biochemistry, 2020, 148, 107866. | 4.2 | 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. | 1.8 | 77 |
| 41 | Localized basal area affects soil respiration temperature sensitivity in a coastal deciduous forest. Biogeosciences, 2020, 17, 771-780. | 1.3 | 5 |
| 42 | Ecological Assembly Processes Are Coordinated between Bacterial and Viral Communities in Fractured Shale Ecosystems. MSystems, 2020, 5, . | 1.7 | 15 |
| 43 | Distinct temporal diversity profiles for nitrogen cycling genes in a hyporheic microbiome. PLoS ONE, 2020, 15, e0228165. | 1.1 | 12 |
| 44 | Methane and nitrous oxide porewater concentrations and surface fluxes of a regulated river. Science of the Total Environment, 2020, 715, 136920. | 3.9 | 20 |
| 45 | A Flux Detection Probe to Quantify Dynamic Groundwaterâ€Surface Water Exchange in the Hyporheic Zone. Ground Water, 2020, 58, 892-900. | 0.7 | 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. | 1.1 | 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. | 1.3 | 19 |
| 48 | Forfeiting the priority effect: turnover defines biofilm community succession. ISME Journal, 2019, 13, 1865-1877. | 4.4 | 83 |
| 49 | Assessing Microbial Community Patterns During Incipient Soil Formation From Basalt. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 941-958. | 1.3 | 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. | 1.9 | 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. | 3.9 | 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. | 3.7 | 14 |
| 53 | Soil pH mediates the balance between stochastic and deterministic assembly of bacteria. ISME Journal, 2018, 12, 1072-1083. | 4.4 | 591 |
| 54 | Riverbed Hydrologic Exchange Dynamics in a Large Regulated River Reach. Water Resources Research, 2018, 54, 2715-2730. | 1.7 | 17 |

| # | Article | IF | Citations |
|---|---|---|---|
| 55 | Influences of organic carbon speciation on hyporheic corridor biogeochemistry and microbial ecology. Nature Communications, 2018, 9, 585. | 5.8 | 110 |
| 56 | WHONDRS: a Community Resource for Studying Dynamic River Corridors. MSystems, 2018, 3, . | 1.7 | 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. | 1.7 | 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. | 2.0 | 147 |
| 59 | At the Nexus of History, Ecology, and Hydrobiogeochemistry: Improved Predictions across Scales through Integration. MSystems, 2018, 3, . | 1.7 | 5 |
| 60 | A unified conceptual framework for prediction and control of microbiomes. Current Opinion in Microbiology, 2018, 44, 20-27. | 2.3 | 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. | 3.9 | 60 |
| 62 | Dispersal limitation and thermodynamic constraints govern spatial structure of permafrost microbial communities. FEMS Microbiology Ecology, 2018, 94, . | 1.3 | 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. | 2.0 | 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, . | 1.4 | 20 |
| 65 | Autogenic succession and deterministic recovery following disturbance in soil bacterial communities. Scientific Reports, 2017, 7, 45691. | 1.6 | 71 |
| 66 | Deterministic influences exceed dispersal effects on hydrologicallyâ€connected microbiomes. Environmental Microbiology, 2017, 19, 1552-1567. | 1.8 | 143 |
| 67 | Geochemical and Microbial Community Attributes in Relation to Hyporheic Zone Geological Facies. Scientific Reports, 2017, 7, 12006. | 1.6 | 40 |
| 68 | Long-term nitrogen addition affects the phylogenetic turnover of soil microbial community responding to moisture pulse. Scientific Reports, 2017, 7, 17492. | 1.6 | 79 |
| 69 | Dispersal-Based Microbial Community Assembly Decreases Biogeochemical Function. Processes, 2017, 5, 65. | 1.3 | 93 |
| 70 | Regulation-Structured Dynamic Metabolic Model Provides a Potential Mechanism for Delayed Enzyme Response in Denitrification Process. Frontiers in Microbiology, 2017, 8, 1866. | 1.5 | 40 |
| 71 | Soil respiration across aÂpermafrost transition zone: spatial structure and environmental correlates. Biogeosciences, 2017, 14, 4341-4354. | 1.3 | 7 |
| 72 | Biogeochemical cycling at the aquaticâ€“terrestrial interface is linked to parafluvial hyporheic zone inundation history. Biogeosciences, 2017, 14, 4229-4241. | 1.3 | 25 |

| # | Article | IF | Citations |
|---|---|---|---|
| 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. | 1.3 | 58 |
| 74 | Aligning the Measurement of Microbial Diversity with Macroecological Theory. Frontiers in Microbiology, 2016, 7, 1487. | 1.5 | 13 |
| 75 | Coupling Spatiotemporal Community Assembly Processes to Changes in Microbial Metabolism. Frontiers in Microbiology, 2016, 7, 1949. | 1.5 | 87 |
| 76 | Spatial and successional dynamics of microbial biofilm communities in a grassland stream ecosystem. Molecular Ecology, 2016, 25, 4674-4688. | 2.0 | 59 |
| 77 | Seasonal hyporheic dynamics control coupled microbiology and geochemistry in Colorado River sediments. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 2976-2987. | 1.3 | 49 |
| 78 | Coupling among Microbial Communities, Biogeochemistry and Mineralogy across Biogeochemical Facies. Scientific Reports, 2016, 6, 30553. | 1.6 | 26 |
| 79 | Groundwaterâ€“surface water mixing shifts ecological assembly processes and stimulates organic carbon turnover. Nature Communications, 2016, 7, 11237. | 5.8 | 290 |
| 80 | Estimating and mapping ecological processes influencing microbial community assembly. Frontiers in Microbiology, 2015, 6, 370. | 1.5 | 578 |
| 81 | The reduced genomes of Parcubacteria (OD1) contain signatures of a symbiotic lifestyle. Frontiers in Microbiology, 2015, 6, 713. | 1.5 | 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. | 1.1 | 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. | 3.3 | 972 |
| 84 | The Gut Microbiota of Rural Papua New Guineans: Composition, Diversity Patterns, and Ecological Processes. Cell Reports, 2015, 11, 527-538. | 2.9 | 475 |
| 85 | On the processes generating latitudinal richness gradients: identifying diagnostic patterns and predictions. Frontiers in Genetics, 2014, 5, 420. | 1.1 | 27 |
| 86 | When should species richness be energy limited, and how would we know?. Ecology Letters, 2014, 17, 401-413. | 3.0 | 107 |
| 87 | Linking microbial community structure to Î²-glucosidic function in soil aggregates. ISME Journal, 2013, 7, 2044-2053. | 4.4 | 110 |
| 88 | Quantifying community assembly processes and identifying features that impose them. ISME Journal, 2013, 7, 2069-2079. | 4.4 | 1,354 |
| 89 | Stochastic and deterministic drivers of spatial and temporal turnover in breeding bird communities. Global Ecology and Biogeography, 2013, 22, 202-212. | 2.7 | 121 |
| 90 | Phylogenetic beta diversity in bacterial assemblages across ecosystems: deterministic versus stochastic processes. ISME Journal, 2013, 7, 1310-1321. | 4.4 | 515 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | An empirical assessment of tree branching networks and implications for plant allometric scaling models. Ecology Letters, 2013, 16, 1069-1078. | 3.0 | 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. | 3.5 | 124 |
| 93 | The epsomitic phototrophic microbial mat of Hot Lake, Washington: community structural responses to seasonal cycling. Frontiers in Microbiology, 2013, 4, 323. | 1.5 | 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. | 1.2 | 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. | 1.2 | 54 |
| 96 | Interannual variability of growth and reproduction in Bursera simaruba: the role of allometry and resource variability. Ecology, 2012, 93, 180-190. | 1.5 | 19 |
| 97 | Response to Comments on â€œDisentangling the Drivers of Î² Diversity Along Latitudinal and Elevational Gradientsâ€. Science, 2012, 335, 1573-1573. | 6.0 | 8 |
| 98 | Eco-Evolutionary Community Dynamics: Covariation between Diversity and Invasibility across Temperature Gradients. American Naturalist, 2012, 180, E110-E126. | 1.0 | 9 |
| 99 | Testing the metabolic theory of ecology. Ecology Letters, 2012, 15, 1465-1474. | 3.0 | 155 |
| 100 | Stochastic and deterministic assembly processes in subsurface microbial communities. ISME Journal, 2012, 6, 1653-1664. | 4.4 | 1,203 |
| 101 | Temporal turnover in the composition of tropical tree communities: functional determinism and phylogenetic stochasticity. Ecology, 2012, 93, 490-499. | 1.5 | 168 |
| 102 | The biogeography and filtering of woody plant functional diversity in North and South America. Global Ecology and Biogeography, 2012, 21, 798-808. | 2.7 | 235 |
| 103 | Navigating the multiple meanings of Î² diversity: a roadmap for the practicing ecologist. Ecology Letters, 2011, 14, 19-28. | 3.0 | 1,899 |
| 104 | Variation in above-ground forest biomass across broad climatic gradients. Global Ecology and Biogeography, 2011, 20, 744-754. | 2.7 | 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. | 3.5 | 155 |
| 106 | Disentangling the Drivers of Î² Diversity Along Latitudinal and Elevational Gradients. Science, 2011, 333, 1755-1758. | 6.0 | 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. | 1.0 | 1 |
| 108 | Inferring Ecological Processes from Taxonomic, Phylogenetic and Functional Trait Î²-Diversity. PLoS ONE, 2011, 6, e20906. | 1.1 | 69 |

| # | Article | IF | Citations |
|---|---|---|---|
| 109 | Integrating elements and energy through the metabolic dependencies of gross growth efficiency and the threshold elemental ratio. Oikos, 2010, 119, 752. | 1.2 | 0 |
| 110 | Integrating elements and energy through the metabolic dependencies of gross growth efficiency and the threshold elemental ratio. Oikos, 2010, 119, 752-765. | 1.2 | 51 |
| 111 | Functional trait assembly through ecological and evolutionary time. Theoretical Ecology, 2009, 2, 239-250. | 0.4 | 19 |
| 112 | Advancing the metabolic theory of biodiversity. Ecology Letters, 2009, 12, 1001-1015. | 3.0 | 68 |
| 113 | Aboveâ€ground forest biomass is not consistently related to wood density in tropical forests. Global Ecology and Biogeography, 2009, 18, 617-625. | 2.7 | 46 |
| 114 | On the relationship between mass and diameter distributions in tree communities. Ecology Letters, 2008, 11, 1287-1293. | 3.0 | 13 |
| 115 | The control of color change in the Pacific tree frog, Hyla regilla. Canadian Journal of Zoology, 2004, 82, 889-896. | 0.4 | 39 |