

Melanie A Mayes

List of Publications by Year in descending order

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Version: 2024-02-01

65
papers

3,527
citations

201674

27
h-index

144013

57
g-index

85
all docs

85
docs citations

85
times ranked

4653
citing authors

#	ARTICLE	IF	CITATIONS
1	The global soil community and its influence on biogeochemistry. <i>Science</i> , 2019, 365, .	12.6	586
2	Soil extracellular enzyme activities, soil carbon and nitrogen storage under nitrogen fertilization: A meta-analysis. <i>Soil Biology and Biochemistry</i> , 2016, 101, 32-43.	8.8	483
3	Development of microbial enzyme-mediated decomposition model parameters through steady-state and dynamic analyses. <i>Ecological Applications</i> , 2013, 23, 255-272.	3.8	190
4	Impact of Uranyl-Calcium-Carbonato Complexes on Uranium(VI) Adsorption to Synthetic and Natural Sediments. <i>Environmental Science & Technology</i> , 2010, 44, 928-934.	10.0	169
5	Multiple models and experiments underscore large uncertainty in soil carbon dynamics. <i>Biogeochemistry</i> , 2018, 141, 109-123.	3.5	169
6	The Millennial model: in search of measurable pools and transformations for modeling soil carbon in the new century. <i>Biogeochemistry</i> , 2018, 137, 51-71.	3.5	139
7	Community proteogenomics reveals the systemic impact of phosphorus availability on microbial functions in tropical soil. <i>Nature Ecology and Evolution</i> , 2018, 2, 499-509.	7.8	116
8	Microbial dormancy improves development and experimental validation of ecosystem model. <i>ISME Journal</i> , 2015, 9, 226-237.	9.8	113
9	Soil carbon sensitivity to temperature and carbon use efficiency compared across microbial-ecosystem models of varying complexity. <i>Biogeochemistry</i> , 2014, 119, 67-84.	3.5	89
10	Parameter estimation for models of ligninolytic and cellulolytic enzyme kinetics. <i>Soil Biology and Biochemistry</i> , 2012, 48, 28-38.	8.8	77
11	Reduced carbon use efficiency and increased microbial turnover with soil warming. <i>Global Change Biology</i> , 2019, 25, 900-910.	9.5	70
12	Relation between Soil Order and Sorption of Dissolved Organic Carbon in Temperate Subsoils. <i>Soil Science Society of America Journal</i> , 2012, 76, 1027-1037.	2.2	65
13	Interactions among roots, mycorrhizas and free-living microbial communities differentially impact soil carbon processes. <i>Journal of Ecology</i> , 2015, 103, 1442-1453.	4.0	64
14	Kinetic parameters of phosphatase: A quantitative synthesis. <i>Soil Biology and Biochemistry</i> , 2013, 65, 105-113.	8.8	61
15	Representation of Dormant and Active Microbial Dynamics for Ecosystem Modeling. <i>PLoS ONE</i> , 2014, 9, e89252.	2.5	59
16	CXTFIT/Excel-A modular adaptable code for parameter estimation, sensitivity analysis and uncertainty analysis for laboratory or field tracer experiments. <i>Computers and Geosciences</i> , 2010, 36, 1200-1209.	4.2	56
17	Substrate quality alters the microbial mineralization of added substrate and soil organic carbon. <i>Biogeosciences</i> , 2014, 11, 4665-4678.	3.3	56
18	COSORE: A community database for continuous soil respiration and other soil-atmosphere greenhouse gas flux data. <i>Global Change Biology</i> , 2020, 26, 7268-7283.	9.5	50

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19	Activation Energy of Extracellular Enzymes in Soils from Different Biomes. PLoS ONE, 2013, 8, e59943.	2.5	45
20	Response of <i>Alamo</i> switchgrass tissue chemistry and biomass to nitrogen fertilization in West Tennessee, USA. Agriculture, Ecosystems and Environment, 2011, 140, 289-297.	5.3	42
21	Dissolved organic matter reduces the effectiveness of sorbents for mercury removal. Science of the Total Environment, 2019, 690, 410-416.	8.0	42
22	Soil moisture drives microbial controls on carbon decomposition in two subtropical forests. Soil Biology and Biochemistry, 2019, 130, 185-194.	8.8	42
23	Vadose Zone Flow and Transport of Dissolved Organic Carbon at Multiple Scales in Humid Regimes. Vadose Zone Journal, 2006, 5, 140-152.	2.2	39
24	Soil carbon stocks in temperate grasslands differ strongly across sites but are insensitive to decade-long fertilization. Global Change Biology, 2022, 28, 1659-1677.	9.5	34
25	Biological mechanisms may contribute to soil carbon saturation patterns. Global Change Biology, 2021, 27, 2633-2644.	9.5	33
26	Selective Sorption of Dissolved Organic Carbon Compounds by Temperate Soils. PLoS ONE, 2012, 7, e50434.	2.5	33
27	Investigation of laser-induced breakdown spectroscopy and multivariate analysis for differentiating inorganic and organic C in a variety of soils. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2013, 87, 100-107.	2.9	32
28	Spatial Arrangement of Organic Compounds on a Model Mineral Surface: Implications for Soil Organic Matter Stabilization. Environmental Science & Technology, 2014, 48, 79-84.	10.0	29
29	Plant roots stimulate the decomposition of complex, but not simple, soil carbon. Functional Ecology, 2020, 34, 899-910.	3.6	28
30	Bringing function to structure: Root-soil interactions shaping phosphatase activity throughout a soil profile in Puerto Rico. Ecology and Evolution, 2021, 11, 1150-1164.	1.9	28
31	Role of soil organic carbon and colloids in sorption and transport of TNT, RDX and HMX in training range soils. Chemosphere, 2013, 92, 993-1000.	8.2	27
32	Modeling the processes of soil moisture in regulating microbial and carbon-nitrogen cycling. Journal of Hydrology, 2020, 585, 124777.	5.4	27
33	How much carbon can be added to soil by sorption?. Biogeochemistry, 2021, 152, 127-142.	3.5	27
34	Phosphate addition increases tropical forest soil respiration primarily by deconstraining microbial population growth. Soil Biology and Biochemistry, 2019, 130, 43-54.	8.8	26
35	Transport of Sr ²⁺ and SrEDTA ²⁻ in partially-saturated and heterogeneous sediments. Journal of Contaminant Hydrology, 2007, 91, 267-287.	3.3	23
36	Decomposition of added and native organic carbon from physically separated fractions of diverse soils. Biology and Fertility of Soils, 2014, 50, 613-621.	4.3	23

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37	Genome-Resolved Proteomic Stable Isotope Probing of Soil Microbial Communities Using ¹³ C ₂ and ¹³ C-Methanol. <i>Frontiers in Microbiology</i> , 2019, 10, 2706.	3.5	23
38	Chemical and isotope compositions of shallow groundwater in areas impacted by hydraulic fracturing and surface mining in the Central Appalachian Basin, Eastern United States. <i>Applied Geochemistry</i> , 2016, 71, 73-85.	3.0	22
39	Differential effects of warming and nitrogen fertilization on soil respiration and microbial dynamics in switchgrass croplands. <i>GCB Bioenergy</i> , 2018, 10, 565-576.	5.6	21
40	Phosphorus rather than nitrogen enhances CO ₂ emissions in tropical forest soils: Evidence from a laboratory incubation study. <i>European Journal of Soil Science</i> , 2020, 71, 495-510.	3.9	21
41	Improving parameter estimation for column experiments by multi-model evaluation and comparison. <i>Journal of Hydrology</i> , 2009, 376, 567-578.	5.4	20
42	Phosphorus sorption on tropical soils with relevance to Earth system model needs. <i>Soil Research</i> , 2019, 57, 17.	1.1	20
43	Source relationships between streambank soils and streambed sediments in a mercury-contaminated stream. <i>Journal of Soils and Sediments</i> , 2019, 19, 2007-2019.	3.0	18
44	Multi-year incubation experiments boost confidence in model projections of long-term soil carbon dynamics. <i>Nature Communications</i> , 2020, 11, 5864.	12.8	18
45	Microbial seasonality promotes soil respiratory carbon emission in natural ecosystems: A modeling study. <i>Global Change Biology</i> , 2021, 27, 3035-3051.	9.5	16
46	Quantifying the Effects of Small-Scale Heterogeneities on Flow and Transport in Undisturbed Cores from the Hanford Formation. <i>Vadose Zone Journal</i> , 2003, 2, 664-676.	2.2	16
47	Effect of long-term irrigation patterns on phosphorus forms and distribution in the brown soil zone. <i>PLoS ONE</i> , 2017, 12, e0188361.	2.5	15
48	Neutron reflectometry reveals the internal structure of organic compounds deposited on aluminum oxide. <i>Geoderma</i> , 2013, 192, 182-188.	5.1	13
49	Dynamics of Fungal and Bacterial Biomass Carbon in Natural Ecosystems: Site-Level Applications of the CLM-Microbe Model. <i>Journal of Advances in Modeling Earth Systems</i> , 2021, 13, e2020MS002283.	3.8	11
50	Exploring the sustainability and sealing mechanisms of unlined ponds for growing algae for fuel and other commodity-scale products. <i>Renewable and Sustainable Energy Reviews</i> , 2020, 121, 109708.	16.4	8
51	Evaluating the E3SM land model version 0 (ELMv0) at a temperate forest site using flux and soil water measurements. <i>Geoscientific Model Development</i> , 2019, 12, 1601-1612.	3.6	7
52	Soil Carbon Accumulation and Nutrient Availability in Managed and Unmanaged Ecosystems of East Tennessee. <i>Soil Science Society of America Journal</i> , 2019, 83, 458-465.	2.2	7
53	Investigating drivers of microbial activity and respiration in a forested bog. <i>Pedosphere</i> , 2020, 30, 135-145.	4.0	7
54	Nitrogen Fertilization Restructured Spatial Patterns of Soil Organic Carbon and Total Nitrogen in Switchgrass and Gamagrass Croplands in Tennessee USA. <i>Scientific Reports</i> , 2020, 10, 1211.	3.3	7

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55	Differential Organic Carbon Mineralization Responses to Soil Moisture in Three Different Soil Orders Under Mixed Forested System. <i>Frontiers in Environmental Science</i> , 2021, 9, .	3.3	7
56	Quantifying the physical and chemical mass transfer processes for the fate and transport of Co(II)EDTA in a partially-weathered limestone–shale saprolite. <i>Journal of Contaminant Hydrology</i> , 2007, 90, 184-202.	3.3	6
57	Effects of nitrogen fertilization and bioenergy crop type on topsoil organic carbon and total Nitrogen contents in middle Tennessee USA. <i>PLoS ONE</i> , 2020, 15, e0230688.	2.5	6
58	Soil sealing by algae: An alternative to plastic pond liners for outdoor algal cultivation. <i>Algal Research</i> , 2019, 38, 101414.	4.6	5
59	Estimating Effective Hydraulic Parameters of Unsaturated Layered Sediments Using a Cantor Bar Composite Medium Model. <i>Vadose Zone Journal</i> , 2008, 7, 493-499.	2.2	4
60	Influence of Sedimentary Bedding on Reactive Transport Parameters under Unsaturated Conditions. <i>Soil Science Society of America Journal</i> , 2009, 73, 1938-1946.	2.2	4
61	Evaluation of engineered sorbents for the sorption of mercury from contaminated bank soils: a column study. <i>Environmental Science and Pollution Research</i> , 2021, 28, 22651-22663.	5.3	3
62	Representing methane emissions from wet tropical forest soils using microbial functional groups constrained by soil diffusivity. <i>Biogeosciences</i> , 2021, 18, 1769-1786.	3.3	3
63	Intensified Soil Moisture Extremes Decrease Soil Organic Carbon Decomposition: A Mechanistic Modeling Analysis. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2021, 126, e2021JG006392.	3.0	3
64	Transport of Explosive Residue Surrogates in Saturated Porous Media. <i>Water, Air, and Soil Pollution</i> , 2012, 223, 1983-1993.	2.4	2
65	Coupled Hydrological and Geochemical Processes Governing the Fate and Transport of Sr and U in the Hanford Vadose Zone. <i>ACS Symposium Series</i> , 2005, , 229-250.	0.5	1