Craig Rasmussen

List of Publications by Year
in descending order

96 papers	3,767 citations	109264 35 h-index	143943 57 g-index
104 all docs	104 docs citations	104 times ranked	4563 citing authors

#	Article	IF	Citations
1	Beyond bulk: Density fractions explain heterogeneity in global soil carbon abundance and persistence. Global Change Biology, 2022, 28, 1178-1196.	4.2	67
2	Soil minerals affect taxon-specific bacterial growth. ISME Journal, 2022, 16, 1318-1326.	4.4	24
3	Expanding the Paradigm: The influence of climate and lithology on soil phosphorus. Geoderma, 2022, 421, 115809.	2.3	9
4	Soil science research priorities in the United States. Geoderma Regional, 2022, 29, e00526.	0.9	1
5	Divergent controls on carbon concentration and persistence between forests and grasslands of the conterminous US. Biogeochemistry, 2021, 156, 41-56.	1.7	20
6	Assessing soil thickness in a black soil watershed in northeast China using random forest and field observations. International Soil and Water Conservation Research, 2021, 9, 49-57.	3.0	19
7	Soil organic carbon is not just for soil scientists: measurement recommendations for diverse practitioners. Ecological Applications, 2021, 31, e02290.	1.8	18
8	SoDaH: the SOils DAta Harmonization database, an open-source synthesis of soil data from research networks, version 1.0. Earth System Science Data, 2021, 13, 1843-1854.	3.7	17
9	Controls on the Spatial Distribution of Nearâ€Surface Pyrogenic Carbon on Hillslopes 1 Year Following Wildfire. Journal of Geophysical Research F: Earth Surface, 2021, 126, e2020JF005996.	1.0	5
10	The pioneer effect advantage in plant invasions: site priming of native grasslands by invasive grasses. Ecosphere, 2021, 12, e03750.	1.0	3
11	Resolving Deep Critical Zone Architecture in Complex Volcanic Terrain. Journal of Geophysical Research F: Earth Surface, 2020, 125, e2019JF005189.	1.0	13
12	Biochar and woodchip amendments alter restoration outcomes, microbial processes, and soil moisture in a simulated semiâ€arid ecosystem. Restoration Ecology, 2020, 28, S355.	1.4	11
13	Depth and topographic controls on microbial activity in a recently burned sub-alpine catchment. Soil Biology and Biochemistry, 2020, 148, 107844.	4.2	24
14	Woodchip and biochar amendments differentially influence microbial responses, but do not enhance plant recovery in disturbed semiarid soils. Restoration Ecology, 2020, 28, S381.	1.4	12
15	Soil-litter mixing promotes decomposition and soil aggregate formation on contrasting geomorphic surfaces in a shrub-invaded Sonoran Desert grassland. Plant and Soil, 2020, 450, 397-415.	1.8	12
16	An open-source database for the synthesis of soil radiocarbon data: International Soil Radiocarbon Database (ISRaD) version 1.0. Earth System Science Data, 2020, 12, 61-76.	3.7	48
17	Soil Fluid Biogeochemical Response to Climatic Events. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 2866-2882.	1.3	8
18	Hillslope response under variable microclimate. Earth Surface Processes and Landforms, 2019, 44, 2615-2627.	1.2	8

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19	A new geological slip rate estimate for the Calico Fault, eastern California: implications for geodetic versus geologic rate estimates in the Eastern California Shear Zone. International Geology Review, 2019, 61, 1613-1641.	1.1	3
20	Characterization of the perylenequinone pigments in Japanese Andosols and Cambisol. Soil Science and Plant Nutrition, 2019, 65, 1-10.	0.8	8
21	Predictive mapping of soil-landscape relationships in the arid Southwest United States. Catena, 2018, 165, 473-486.	2.2	21
22	Soil mineral assemblage and substrate quality effects on microbial priming. Geoderma, 2018, 322, 38-47.	2.3	50
23	Beyond clay: towards an improved set of variables for predicting soil organic matter content. Biogeochemistry, 2018, 137, 297-306.	1.7	423
24	A net ecosystem carbon budget for snow dominated forested headwater catchments: linking water and carbon fluxes to critical zone carbon storage. Biogeochemistry, 2018, 138, 225-243.	1.7	17
25	Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks. Earth Surface Processes and Landforms, 2018, 43, 1133-1154.	1.2	70
26	Climate, topography, and dust influences on the mineral and geochemical evolution of granitic soils in southern Arizona. Geoderma, 2018, 314, 245-261.	2.3	32
27	Understanding Critical Zone Evolution through Predicting the Threeâ€Dimensional Soil Chemical Properties of a Small Forested Catchment. Soil Science Society of America Journal, 2018, 82, 1538-1550.	1.2	1
28	Role of Mineralogy and Climate in the Soil Carbon Cycle. Developments in Soil Science, 2018, 35, 93-110.	0.5	4
29	Controls on Soil Organic Carbon Partitioning and Stabilization in the California Sierra Nevada. Soil Systems, 2018, 2, 41.	1.0	21
30	Signatures of Obliquity and Eccentricity in Soil Chronosequences. Geophysical Research Letters, 2018, 45, 11,147.	1.5	4
31	Improving understanding of soil organic matter dynamics by triangulating theories, measurements, and models. Biogeochemistry, 2018, 140, 1-13.	1.7	83
32	Variation in the Molecular Structure and Radiocarbon Abundance of Mineral-Associated Organic Matter across a Lithosequence of Forest Soils. Soil Systems, 2018, 2, 36.	1.0	16
33	Why Do Largeâ€Scale Land Surface Models Produce a Low Ratio of Transpiration to Evapotranspiration?. Journal of Geophysical Research D: Atmospheres, 2018, 123, 9109-9130.	1.2	47
34	Coevolution of soil and topography across a semiarid cinder cone chronosequence. Catena, 2017, 156, 338-352.	2.2	12
35	Geochemical evolution of the <scp>C</scp>ritical <scp>Z</scp>one across variable time scales informs concentrationâ€discharge relationships: <scp>J</scp>emez <scp>R</scp>iver <scp>B</scp>asin <scp>C</scp>ritical <scp>Z</scp>one <scp>O</scp>bservatory. Water Resources Research, 2017, 53, 4169-4196.	1.7	57
36	Soil amendments alter plant biomass and soil microbial activity in a semi-desert grassland. Plant and Soil, 2017, 419, 53-70.	1.8	29

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37	Soil organic carbon partitioning and Î”14C variation in desert and conifer ecosystems of southern Arizona. Biogeochemistry, 2017, 134, 261-277.	1.7	6
38	A probabilistic approach to quantifying soil physical properties via time-integrated energy and mass input. Soil, 2017, 3, 67-82.	2.2	5
39	Soils of the Western Range and Irrigated Land Resource Region: LRR D. World Soils Book Series, 2017, , 115-130.	0.1	1
40	Influence of climate variability on water partitioning and effective energy and mass transfer in a semi-arid critical zone. Hydrology and Earth System Sciences, 2016, 20, 1103-1115.	1.9	8
41	U-series isotopic signatures of soils and headwater streams in a semi-arid complex volcanic terrain. Chemical Geology, 2016, 445, 68-83.	1.4	13
42	Scaling GIS analysis tasks from the desktop to the cloud utilizing contemporary distributed computing and data management approaches. , 2016, , .		3
43	Solid-phase redistribution of rare earth elements in hillslope pedons subjected to different hydrologic fluxes. Chemical Geology, 2016, 426, 1-18.	1.4	23
44	Climatic and landscape controls on water transit times and silicate mineral weathering in the critical zone. Water Resources Research, 2015, 51, 6036-6051.	1.7	43
45	Application of Spatial Pedotransfer Functions to Understand Soil Modulation of Vegetation Response to Climate. Vadose Zone Journal, 2015, 14, 1-14.	1.3	10
46	Quantifying Climate and Landscape Position Controls on Soil Development in Semiarid Ecosystems. Soil Science Society of America Journal, 2015, 79, 104-116.	1.2	55
47	Decadal-scale soil redistribution along hillslopes in the Mojave Desert. Earth Surface Dynamics, 2015, 3, 251-264.	1.0	3
48	Quantifying Topographic and Vegetation Effects on the Transfer of Energy and Mass to the Critical Zone. Vadose Zone Journal, 2015, 14, 1-16.	1.3	37
49	Passive soil heating using an inexpensive infrared mirror design â€“ a proof of concept. Soil, 2015, 1, 631-639.	2.2	4
50	Quantifying soil and critical zone variability in a forested catchment through digital soil mapping. Soil, 2015, 1, 47-64.	2.2	31
51	The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. Geomorphology, 2015, 244, 190-203.	1.1	47
52	Subsurface soil textural control of aboveground productivity in the US Desert Southwest. Geoderma Regional, 2015, 4, 44-54.	0.9	12
53	Rare earth elements as reactive tracers of biogeochemical weathering in forested rhyolitic terrain. Chemical Geology, 2015, 391, 19-32.	1.4	67
54	Fractionation of Dissolved Organic Matter by (Oxy)Hydroxideâ€Coated Sands: Competitive Sorbate Displacement during Reactive Transport. Vadose Zone Journal, 2014, 13, 1-13.	1.3	22

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55	Linking soil element-mass-transfer to microscale mineral weathering across a semiarid environmental gradient. Chemical Geology, 2014, 381, 26-39.	1.4	22
56	A Cross-scale Study of Feldspar Transformation in the Santa Catalina Mountain Critical Zone Observatory. Procedia Earth and Planetary Science, 2014, 10, 63-68.	0.6	4
57	Covariate selection with iterative principal component analysis for predicting physical soil properties. Geoderma, 2014, 219-220, 46-57.	2.3	36
58	Factors affecting the molecular structure and mean residence time of occluded organics in a lithosequence of soils under ponderosa pine. Soil Biology and Biochemistry, 2014, 77, 1-11.	4.2	33
59	Semi-Automated Disaggregation of a Conventional Soil Map Using Knowledge Driven Data Mining and Random Forests in the Sonoran Desert, USA. Photogrammetric Engineering and Remote Sensing, 2014, 80, 353-366.	0.3	24
60	Predicting the thickness and aeolian fraction of soils in upland watersheds of the Mojave Desert. Geoderma, 2013, 195-196, 94-110.	2.3	23
61	Sorptive fractionation of organic matter and formation of organo-hydroxy-aluminum complexes during litter biodegradation in the presence of gibbsite. Geochimica Et Cosmochimica Acta, 2013, 121, 667-683.	1.6	54
62	The influence of goethite and gibbsite on soluble nutrient dynamics and microbial community composition. Biogeochemistry, 2013, 112, 179-195.	1.7	24
63	Coevolution of nonlinear trends in vegetation, soils, and topography with elevation and slope aspect: A case study in the sky islands of southern Arizona. Journal of Geophysical Research F: Earth Surface, 2013, 118, 741-758.	1.0	76
64	Carbon Stable Isotope Composition of Modern Calcareous Soil Profiles in California: Implications for CO2 Reconstructions from Calcareous Paleosols. , 2013, , 17-34.		10
65	Technical Note: A comparison of model and empirical measures of catchment-scale effective energy and mass transfer. Hydrology and Earth System Sciences, 2013, 17, 3389-3395.	1.9	6
66	Effects of a Biochar-Amended Alkaline Soil on the Growth of Romaine Lettuce and Bermudagrass. Soil Science, 2012, 177, 561-570.	0.9	85
67	Factors Influencing Observed Variations in the Structure of Bacterial Communities On Calcite Formations in Kartchner Caverns, AZ, USA. Geomicrobiology Journal, 2012, 29, 422-434.	1.0	14
68	Thermodynamic constraints on effective energy and mass transfer and catchment function. Hydrology and Earth System Sciences, 2012, 16, 725-739.	1.9	19
69	Calibration and testing of upland hillslope evolution models in a dated landscape: Banco Bonito, New Mexico. Journal of Geophysical Research, 2011, 116, .	3.3	28
70	The effects of climate and landscape position on chemical denudation and mineral transformation in the Santa Catalina mountain critical zone observatory. Applied Geochemistry, 2011, 26, S80-S84.	1.4	19
71	Changes in water extractable organic matter during incubation of forest floor material in the presence of quartz, goethite and gibbsite surfaces. Geochimica Et Cosmochimica Acta, 2011, 75, 4295-4309.	1.6	43
72	Lithologic controls on regolith weathering and mass flux in forested ecosystems of the southwestern USA. Geoderma, 2011, 164, 99-111.	2.3	39

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73	Strong climate and tectonic control on plagioclase weathering in granitic terrain. Earth and Planetary Science Letters, 2011, 301, 521-530.	1.8	119
74	Considerations for Atmospheric Correction of Surface Reflectance for Soil Survey Applications. Soil Horizons, 2011, 52, 48.	0.3	3
75	An open system framework for integrating critical zone structure and function. Biogeochemistry, 2011, 102, 15-29.	1.7	103
76	Methodological considerations for using thermal analysis in the characterization of soil organic matter. Journal of Thermal Analysis and Calorimetry, 2011, 104, 389-398.	2.0	60
77	How Water, Carbon, and Energy Drive Critical Zone Evolution: The Jemezâ€"Santa Catalina Critical Zone Observatory. Vadose Zone Journal, 2011, 10, 884-899.	1.3	111
78	Human-Soil Relations are Changing Rapidly: Proposals from SSSA's Cross-Divisional Soil Change Working Group. Soil Science Society of America Journal, 2011, 75, 2079-2084.	1.2	70
79	Vegetation Effects on Soil Organic Carbon Quality in an Arid Hyperthermic Ecosystem. Soil Science, 2010, 175, 438-446.	0.9	10
80	Pedogenesis along a thermal gradient in a geothermal region of the southern Cascades, California. Geoderma, 2010, 154, 495-507.	2.3	4
81	Basalt weathering and pedogenesis across an environmental gradient in the southern Cascade Range, California, USA. Geoderma, 2010, 154, 473-485.	2.3	112
82	Geologic controls of soil carbon cycling and microbial dynamics in temperate conifer forests. Chemical Geology, 2009, 267, 12-23.	1.4	72
83	Vegetation controls on soil organic carbon dynamics in an arid, hyperthermic ecosystem. Geoderma, 2009, 150, 214-223.	2.3	30
84	Geomorphically based predictive mapping of soil thickness in upland watersheds. Water Resources Research, 2009, 45, .	1.7	115
85	Quantifying the climatic and tectonic controls on hillslope steepness and erosion rate. Lithosphere, 2009, 1, 73-80.	0.6	52
86	Litter type and soil minerals control temperate forest soil carbon response to climate change. Global Change Biology, 2008, 14, 2064-2080.	4.2	44
87	Response to Comments on â€œModeling Energy Inputs to Predict Pedogenic Environments Using Regional Environmental Databasesâ€• Soil Science Society of America Journal, 2008, 72, 860-860.	1.2	1
88	Applying a Quantitative Pedogenic Energy Model across a Range of Environmental Gradients. Soil Science Society of America Journal, 2007, 71, 1719-1729.	1.2	75
89	Soil Genesis and Mineral Transformation Across an Environmental Gradient on Andesitic Lahar. Soil Science Society of America Journal, 2007, 71, 225-237.	1.2	75
90	Soil Mineralogy Affects Conifer Forest Soil Carbon Source Utilization and Microbial Priming. Soil Science Society of America Journal, 2007, 71, 1141-1150.	1.2	78

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91	Distribution of Soil Organic and Inorganic Carbon Pools by Biome and Soil Taxa in Arizona. Soil Science Society of America Journal, 2006, 70, 256-265.	1.2	74
92	Mineral control of organic carbon mineralization in a range of temperate conifer forest soils. Global Change Biology, 2006, 12, 834-847.	4.2	148
93	Modeling Energy Inputs to Predict Pedogenic Environments Using Regional Environmental Databases. Soil Science Society of America Journal, 2005, 69, 1266-1274.	1.2	64
94	Mineral Assemblage and Aggregates Control Carbon Dynamics in a California Conifer Forest. Soil Science Society of America Journal, 2005, 69, 1711-1721.	1.2	160
95	Controlled Experiments of Hillslope Coevolution at the Biosphere 2 Landscape Evolution Observatory: Toward Prediction of Coupled Hydrological, Biogeochemical, and Ecological Change. , 0, , .		9
96	Shutting down dust emission during the middle Holocene drought in the Sonoran Desert, Arizona, USA. Geology, 0, , .	2.0	1