Jennifer C Mcelwain

List of Publications by Year
in descending order

102 papers	6,474 citations	76326 40 h-index	66911 78 g-index
115 all docs	115 docs citations	115 times ranked	5104 citing authors

#	Article	IF	Citations
1	Fossil Plants and Global Warming at the Triassic-Jurassic Boundary. Science, 1999, 285, 1386-1390.	12.6	574
2	Changes in carbon dioxide during an oceanic anoxic event linked to intrusion into Gondwana coals. Nature, 2005, 435, 479-482.	27.8	422
3	Mass extinction events and the plant fossil record. Trends in Ecology and Evolution, 2007, 22, 548-557.	8.7	261
4	Stomatal Density and Index of Fossil Plants Track Atmospheric Carbon Dioxide in the Palaeozoic. Annals of Botany, 1995, 76, 389-395.	2.9	256
5	Past climates inform our future. Science, 2020, 370, .	12.6	253
6	Carbon sequestration activated by a volcanic CO2 pulse during Ocean Anoxic Event 2. Nature Geoscience, 2010, 3, 205-208.	12.9	204
7	Climate, pCO2 and terrestrial carbon cycle linkages during late Palaeozoic glacialâ€“interglacial cycles. Nature Geoscience, 2016, 9, 824-828.	12.9	189
8	Limits for Combustion in Low O ₂ Redefine Paleoatmospheric Predictions for the Mesozoic. Science, 2008, 321, 1197-1200.	12.6	160
9	Baseline intrinsic flammability of Earthâ€™s ecosystems estimated from paleoatmospheric oxygen over the past 350 million years. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22448-22453.	7.1	158
10	Do fossil plants signal palaeoatmospheric carbon dioxide concentration in the geological past?. Philosophical Transactions of the Royal Society B: Biological Sciences, 1998, 353, 83-96.	4.0	157
11	Macroecological responses of terrestrial vegetation to climatic and atmospheric change across the Triassic/Jurassic boundary in East Greenland. Paleobiology, 2007, 33, 547-573.	2.0	156
12	Increased fire activity at the Triassic/Jurassic boundary in Greenland due to climate-driven floral change. Nature Geoscience, 2010, 3, 426-429.	12.9	156
13	Using modern plant trait relationships between observed and theoretical maximum stomatal conductance and vein density to examine patterns of plant macroevolution. New Phytologist, 2016, 209, 94-103.	7.3	153
14	Extremely elevated CO2 concentrations at the Triassic/Jurassic boundary. Palaeogeography, Palaeoclimatology, Palaeoecology, 2011, 308, 418-432.	2.3	144
15	Fossil Plant Relative Abundances Indicate Sudden Loss of Late Triassic Biodiversity in East Greenland. Science, 2009, 324, 1554-1556.	12.6	130
16	The Fossil Cuticle as a Skeletal Record of Environmental Change. Palaios, 1996, 11, 376.	1.3	128
17	Hot, dry, wet, cold or toxic? Revisiting the ecological significance of leaf and cuticular micromorphology. Palaeogeography, Palaeoclimatology, Palaeoecology, 2008, 262, 79-90.	2.3	124
18	Sensitivity of leaf size and shape to climate within <i> Acer rubrum</i> and <i>Quercus kelloggii</i>. New Phytologist, 2008, 179, 808-817.	7.3	120

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19	Stomatal control as a driver of plant evolution. Journal of Experimental Botany, 2011, 62, 2419-2423.	4.8	115
20	Ancient Atmospheres and the Evolution of Oxygen Sensing Via the Hypoxia-Inducible Factor in Metazoans. Physiology, 2010, 25, 272-279.	3.1	108
21	Co-ordination of physiological and morphological responses of stomata to elevated [CO2] in vascular plants. Oecologia, 2013, 171, 71-82.	2.0	108
22	Carbonâ€Cycle Perturbation in the Middle Jurassic and Accompanying Changes in the Terrestrial Paleoenvironment. Journal of Geology, 2003, 111, 259-276.	1.4	106
23	Short communication. Stomatal responses of the 'living fossil' Ginkgo biloba L. to changes in atmospheric CO2 concentrations. Journal of Experimental Botany, 1998, 49, 1603-1607.	4.8	104
24	The severity of wheat diseases increases when plants and pathogens are acclimatized to elevated carbon dioxide. Global Change Biology, 2015, 21, 2661-2669.	9.5	103
25	Stomatal frequency adjustment of four conifer species to historical changes in atmospheric CO₂. American Journal of Botany, 2003, 90, 610-619.	1.7	101
26	Mid-Cretaceous pCO2 based on stomata of the extinct conifer Pseudofrenelopsis (Cheirolepidiaceae). Geology, 2005, 33, 749.	4.4	99
27	Does Size Matter? Atmospheric CO2 May Be a Stronger Driver of Stomatal Closing Rate Than Stomatal Size in Taxa That Diversified under Low CO2. Frontiers in Plant Science, 2016, 7, 1253.	3.6	99
28	An explanation for conflicting records of Triassicâ€“Jurassic plant diversity. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 15351-15356.	7.1	86
29	Climate-independent paleoaltimetry using stomatal density in fossil leaves as a proxy for CO2 partial pressure. Geology, 2004, 32, 1017.	4.4	84
30	The fossil plant record and global climatic change. Review of Palaeobotany and Palynology, 1997, 95, 73-82.	1.5	75
31	Paleoecology, Ploidy, Paleoatmospheric Composition, and Developmental Biology: A Review of the Multiple Uses of Fossil Stomata. Plant Physiology, 2017, 174, 650-664.	4.8	64
32	Dynamic Carboniferous tropical forests: new views of plant function and potential for physiological forcing of climate. New Phytologist, 2017, 215, 1333-1353.	7.3	64
33	Differences in the response sensitivity of stomatal index to atmospheric CO2 among four genera of Cupressaceae conifers. Annals of Botany, 2010, 105, 411-418.	2.9	61
34	Palynostratigraphy and vegetation history of the Triassicâ€“Jurassic transition in East Greenland. Journal of the Geological Society, 2013, 170, 37-46.	2.1	57
35	Deep-time evidence of a link between elevated CO2 concentrations and perturbations in the hydrological cycle via drop in plant transpiration. Geology, 2012, 40, 815-818.	4.4	56
36	Rising CO ₂ drives divergence in water use efficiency of evergreen and deciduous plants. Science Advances, 2019, 5, eaax7906.	10.3	56

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37	Higher species richness enhances yield stability in intensively managed grasslands with experimental disturbance. Scientific Reports, 2018, 8, 15047.	3.3	52
38	The influence of climate on the spatial patterning of Neotropical plant families. Journal of Biogeography, 2008, 35, 117-130.	3.0	47
39	Fossil plant stomata indicate decreasing atmospheric CO₂ prior to the Eoceneâ€“Oligocene boundary. Climate of the Past, 2016, 12, 439-454.	3.4	47
40	Increased Atmospheric SO2 Detected from Changes in Leaf Physiognomy across the Triassicâ€“Jurassic Boundary Interval of East Greenland. PLoS ONE, 2013, 8, e60614.	2.5	41
41	Was atmospheric CO 2 capped at 1000 ppm over the past 300 million years?. Palaeogeography, Palaeoclimatology, Palaeoecology, 2016, 441, 653-658.	2.3	39
42	Relationship of stomatal density and index of Salix cinerea to atmospheric carbon dioxide concentrations in the Holocene. Holocene, 1995, 5, 216-219.	1.7	38
43	An organic record of terrestrial ecosystem collapse and recovery at the Triassicâ€“Jurassic boundary in East Greenland. Geochimica Et Cosmochimica Acta, 2014, 127, 251-263.	3.9	38
44	Paleobotany and Global Change: Important Lessons for Species to Biomes from Vegetation Responses to Past Global Change. Annual Review of Plant Biology, 2018, 69, 761-787.	18.7	38
45	Evolutionary differences in Î”13C detected between spore and seed bearing plants following exposure to a range of atmospheric O2:CO2 ratios; implications for paleoatmosphere reconstruction. Geochimica Et Cosmochimica Acta, 2017, 213, 517-533.	3.9	37
46	THE TRIASSIC-JURASSIC BOUNDARY CARBON-ISOTOPE EXCURSIONS EXPRESSED IN TAXONOMICALLY IDENTIFIED LEAF CUTICLES. Palaios, 2011, 26, 461-469.	1.3	33
47	How well do you know your growth chambers? Testing for chamber effect using plant traits. Plant Methods, 2015, 11, 44.	4.3	33
48	The stomatal CO2 proxy does not saturate at high atmospheric CO2 concentrations: evidence from stomatal index responses of Araucariaceae conifers. Oecologia, 2011, 167, 11-19.	2.0	32
49	Sulphur dioxide fumigation effects on stomatal density and index of non-resistant plants: Implications for the stomatal palaeo-[CO2] proxy method. Review of Palaeobotany and Palynology, 2012, 182, 44-54.	1.5	29
50	Cretaceous CO2 Decline and the Radiation and Diversification of Angiosperms. , 2005, , 133-165.		27
51	Stomatal index responses of <i>Agrostis canina</i> to CO₂ and sulphur dioxide: implications for palaeoâ€[CO₂] using the stomatal proxy. New Phytologist, 2010, 188, 845-855.	7.3	27
52	Terrestrial and marginal-marine record of the mid-Cretaceous Oceanic Anoxic Event 2 (OAE 2): High-resolution framework, carbon isotopes, CO2 and sea-level change. Palaeogeography, Palaeoclimatology, Palaeoecology, 2019, 524, 118-136.	2.3	27
53	Quantitative estimates of glacial and Holocene temperature and precipitation change in lowland Amazonian Bolivia. Geology, 2008, 36, 667.	4.4	25
54	Sorting It Out in Endosomes: An Emerging Concept in Renal Epithelial Cell Transport Regulation. Physiology, 2010, 25, 280-292.	3.1	24

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55	Bennettitalean leaf cuticle fragments (here <i>Anomozamites</i> and <i>Pterophyllum</i>) can be used interchangeably in stomatal frequencyâ€based palaeoâ€CO₂ reconstructions. Palaeontology, 2011, 54, 867-882.	2.2	23
56	Reconstructing Extinct Plant Water Use for Understanding Vegetationâ€"Climate Feedbacks: Methods, Synthesis, and a Case Study Using the Paleozoic-Era Medullosan Seed Ferns. The Paleontological Society Papers, 2015, 21, 167-196.	0.6	23
57	Testing the accuracy of new paleoatmospheric CO2 proxies based on plant stable carbon isotopic composition and stomatal traits in a range of simulated paleoatmospheric O2:CO2 ratios. Geochimica Et Cosmochimica Acta, 2019, 259, 69-90.	3.9	23
58	Reconstruction of atmospheric CO2 concentration during the late Changhsingian based on fossil conifers from the Dalong Formation in South China. Palaeogeography, Palaeoclimatology, Palaeoecology, 2019, 519, 37-48.	2.3	23
59	Consistent Relationship between Field-Measured Stomatal Conductance and Theoretical Maximum Stomatal Conductance in C₃Woody Angiosperms in Four Major Biomes. International Journal of Plant Sciences, 2020, 181, 142-154.	1.3	23
60	Convergence in Maximum Stomatal Conductance of C3 Woody Angiosperms in Natural Ecosystems Across Bioclimatic Zones. Frontiers in Plant Science, 2019, 10, 558.	3.6	22
61	Cycads show no stomatal-density and index response to elevated carbon dioxide and subambient oxygen. Australian Journal of Botany, 2011, 59, 630.	0.6	21
62	Palaeobotanical experiences of plant diversity in deep time. 1: How well can we identify past plant diversity in the fossil record?. Palaeogeography, Palaeoclimatology, Palaeoecology, 2021, 576, 110481.	2.3	20
63	A gymnosperm affinity for Ricciisporites tuberculatus Lundblad: implications for vegetation and environmental reconstructions in the Late Triassic. Palaeobiodiversity and Palaeoenvironments, 2014, 94, 295-305.	1.5	19
64	Carboniferous plant physiology breaks the mold. New Phytologist, 2020, 227, 667-679.	7.3	18
65	Damage structures in leaf epidermis and cuticle as an indicator of elevated atmospheric sulphur dioxide in early Mesozoic floras. Review of Palaeobotany and Palynology, 2014, 208, 25-42.	1.5	17
66	A process-based ecosystem model (Paleo-BGC) to simulate the dynamic response of Late Carboniferous plants to elevated O₂ and aridification. Numerische Mathematik, 2020, 320, 547-598.	1.4	17
67	Bipinnate Ptilozamites nilssonii from Jameson Land and new considerations on the genera Ptilozamites Nathorst 1878 and Ctenozamites Nathorst 1886. Review of Palaeobotany and Palynology, 2009, 153, 386-393.	1.5	16
68	A Novel Hypothesis for the Role of Photosynthetic Physiology in Shaping Macroevolutionary Patterns. Plant Physiology, 2019, 181, 1148-1162.	4.8	16
69	An inter-comparison study of three stomatal-proxy methods for CO2 reconstruction applied to early Jurassic Ginkgoales plants. Palaeogeography, Palaeoclimatology, Palaeoecology, 2020, 542, 109547.	2.3	16
70	Tracking Taphonomic Regimes Using Chemical and Mechanical Damage of Pollen and Spores: An Example from the Triassicâ€"Jurassic Mass Extinction. PLoS ONE, 2012, 7, e49153.	2.5	16
71	A new transfer technique to extract and process thin and fragmented fossil cuticle using polyester overlays. Review of Palaeobotany and Palynology, 2007, 145, 243-248.	1.5	15
72	Evolutionary tradeâ€offs in stomatal spacing. New Phytologist, 2016, 210, 1149-1151.	7.3	15

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73	Palaeobotanical experiences of plant diversity in deep time. 2: How to measure and analyse past plant biodiversity. Palaeogeography, Palaeoclimatology, Palaeoecology, 2021, 580, 110618.	2.3	15
74	Genome-wide transcriptomic analysis of the effects of sub-ambient atmospheric oxygen and elevated atmospheric carbon dioxide levels on gametophytes of the moss, Physcomitrella patens. Journal of Experimental Botany, 2015, 66, 4001-4012.	4.8	14
75	Impact of soil salinity on mangrove restoration in a semiarid region: a case study from the Saloum Delta, Senegal. Restoration Ecology, 2021, 29, e13186.	2.9	14
76	On the reconstruction of plant photosynthetic and stress physiology across the Triassicâ€"Jurassic boundary. Turkish Journal of Earth Sciences, 2014, 23, 321-329.	1.0	13
77	Can atmospheric composition influence plant fossil preservation potential via changes in leaf mass per area? A new hypothesis based on simulated palaeoatmosphere experiments.. Palaeogeography, Palaeoclimatology, Palaeoecology, 2016, 464, 51-64.	2.3	13
78	Ferns: a xylem success story. New Phytologist, 2011, 192, 307-310.	7.3	12
79	EVIDENCE FOR INSECT AND ANNELID ACTIVITY ACROSS THE TRIASSIC-JURASSIC TRANSITION OF EAST GREENLAND. Palaios, 2015, 30, 597-607.	1.3	12
80	Differences in the photosynthetic plasticity of ferns and Ginkgo grown in experimentally controlled low [O2]:[CO2] atmospheres may explain their contrasting ecological fate across the Triassicâ€"Jurassic mass extinction boundary. Annals of Botany, 2017, 119, 1385-1395.	2.9	12
81	Enhancing the productivity of ryegrass at elevated CO2 is dependent on tillering and leaf area development rather than leaf-level photosynthesis. Journal of Experimental Botany, 2021, 72, 1962-1977.	4.8	11
82	Freeze tolerance influenced forest cover and hydrology during the Pennsylvanian. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	11
83	New methods reveal oldest known fossil epiphyllous moss: <i>Bryiidites utahensis</i> gen. et sp. nov. (Bryidae). American Journal of Botany, 2013, 100, 2450-2457.	1.7	9
84	Reply to the comment on â€œHot, dry, wet, cold or toxic? Revisiting the ecological significance of leaf cuticular micromorphologyâ€• by M. Haworth and J.C. McElwain [Palaeogeography, Palaeoclimatology, Palaeoecology 262 (2008) 79-90]. Palaeogeography, Palaeoclimatology, Palaeoecology, 2009, 273, 209-211.	2.3	8
85	9. Stomatal Frequency Change Over Altitudinal Gradients: Prospects for Paleoaltimetry. , 2007, , 215-242.		7
86	Variability of water supply affected shoot biomass and root depth distribution of four temperate grassland species in monocultures and mixtures. Journal of Plant Ecology, 2020, 13, 554-562.	2.3	7
87	Willis, K.J., McElwain, J.C. The evolution of plants. Annals of Botany, 2002, 90, 678-679.	2.9	5
88	Climate-independent paleoaltimetry using stomatal density in fossil leaves as a proxy for CO2 partial pressure: Comment and Reply: REPLY. Geology, 2005, 33, e83-e83.	4.4	5
89	Co-ordination in Morphological Leaf Traits of Early Diverging Angiosperms Is Maintained Following Exposure to Experimental Palaeo-atmospheric Conditions of Sub-ambient O2 and Elevated CO2. Frontiers in Plant Science, 2016, 07, 1368.	3.6	5
90	Is the greenhouse theory a fallacy? A paleontological paradox. Palaios, 2002, 17, 417-418.	1.3	4

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91	Long-term fluctuations in atmospheric CO2 concentration influence plant speciation rates. , 0, , 122-140.		4
92	Toarcian land vegetation loss. Nature Geoscience, 2019, 12, 405-406.	12.9	4
93	Plant responses to decadal scale increments in atmospheric CO2 concentration: comparing two stomatal conductance sampling methods. Planta, 2020, 251, 52.	3.2	4
94	<scp>CO₂</scp>â€induced biochemical changes in leaf volatiles decreased fireâ€intensity in the runâ€up to the <scp>Triassicâ€“Jurassic</scp> boundary. New Phytologist, 2022, 235, 1442-1454.	7.3	3
95	Atmospheric Carbon Dioxide-stomata. , 0, , 479-480.		2
96	Heritable Changes in Physiological Gas Exchange Traits in Response to Long-Term, Moderate Free-Air Carbon Dioxide Enrichment. Frontiers in Plant Science, 2019, 10, 1210.	3.6	2
97	Searching for a nearest living equivalent for Bennettitales: a promising extinct plant group for stomatal proxy reconstructions of Mesozoic pCO2. Gff, 0, , 1-12.	1.2	2
98	First occurrence of Camptotheca fruits from late Miocene of southwestern China. Historical Biology, 0, , 1-8.	1.4	1
99	Jennifer McElwain. Current Biology, 2021, 31, R772-R774.	3.9	1
100	Effects of Sulfur Dioxide Exposure on Leaf Mass per Area of Selected Gymnosperms and Implications for Interpreting the Plant Fossil Record. International Journal of Plant Sciences, 2021, 182, 564-575.	1.3	1
101	70 MILLION YEARS OF VEGETATION DYNAMICS. Diversity and Distributions, 2008, 6, 205-206.	4.1	0
102	Palaeobotany: New ways with old fossils. Nature Plants, 2017, 3, 17121.	9.3	0