Andrew D B Leakey

List of Publications by Year
in descending order

89 papers	11,838 citations	53794 45 h-index	51608 86 g-index
101 all docs	101 docs citations	101 times ranked	12796 citing authors

#	Article	IF	Citations
1	Elevated CO2 effects on plant carbon, nitrogen, and water relations: six important lessons from FACE. Journal of Experimental Botany, 2009, 60, 2859-2876.	4.8	1,343
2	Food for Thought: Lower-Than-Expected Crop Yield Stimulation with Rising CO2 Concentrations. Science, 2006, 312, 1918-1921.	12.6	1,299
3	Increasing CO2 threatens human nutrition. Nature, 2014, 510, 139-142.	27.8	1,024
4	The Origins of C ₄ Grasslands: Integrating Evolutionary and Ecosystem Science. Science, 2010, 328, 587-591.	12.6	899
5	Herbivores and nutrients control grassland plant diversity via light limitation. Nature, 2014, 508, 517-520.	27.8	669
6	Photosynthesis, Productivity, and Yield of Maize Are Not Affected by Open-Air Elevation of CO2 Concentration in the Absence of Drought. Plant Physiology, 2006, 140, 779-790.	4.8	451
7	A roadmap for improving the representation of photosynthesis in Earth system models. New Phytologist, 2017, 213, 22-42.	7.3	365
8	FACEâ€ing the facts: inconsistencies and interdependence among field, chamber and modeling studies of elevated [CO₂] impacts on crop yield and food supply. New Phytologist, 2008, 179, 5-9.	7.3	251
9	Rising atmospheric carbon dioxide concentration and the future of C ₄ crops for food and fuel. Proceedings of the Royal Society B: Biological Sciences, 2009, 276, 2333-2343.	2.6	242
10	Intensifying drought eliminates the expected benefits of elevated carbon dioxide for soybean. Nature Plants, 2016, 2, 16132.	9.3	229
11	Global food insecurity. Treatment of major food crops with elevated carbon dioxide or ozone under large-scale fully open-air conditions suggests recent models may have overestimated future yields. Philosophical Transactions of the Royal Society B: Biological Sciences, 2005, 360, 2011-2020.	4.0	227
12	Will Elevated Carbon Dioxide Concentration Amplify the Benefits of Nitrogen Fixation in Legumes?. Plant Physiology, 2009, 151, 1009-1016.	4.8	220
13	High-Throughput Phenotyping of Maize Leaf Physiological and Biochemical Traits Using Hyperspectral Reflectance. Plant Physiology, 2017, 173, 614-626.	4.8	215
14	Genomic basis for stimulated respiration by plants growing under elevated carbon dioxide. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 3597-3602.	7.1	202
15	Water Use Efficiency as a Constraint and Target for Improving the Resilience and Productivity of C₃ and C₄ Crops. Annual Review of Plant Biology, 2019, 70, 781-808.	18.7	202
16	Photosystem II Subunit S overexpression increases the efficiency of water use in a field-grown crop. Nature Communications, 2018, 9, 868.	12.8	181
17	Will photosynthesis of maize (Zea mays) in the US Corn Belt increase in future [CO2] rich atmospheres? An analysis of diurnal courses of CO2 uptake under free-air concentration enrichment (FACE). Global Change Biology, 2004, 10, 951-962.	9.5	167
18	Targets for Crop Biotechnology in a Future High-CO₂ and High-O₃ World. Plant Physiology, 2008, 147, 13-19.	4.8	164

#	Article	IF	Citations
19	Next generation of elevated [CO₂] experiments with crops: a critical investment for feeding the future world. Plant, Cell and Environment, 2008, 31, 1317-1324.	5.7	154
20	Hourly and seasonal variation in photosynthesis and stomatal conductance of soybean grown at future CO2and ozone concentrations for 3 years under fully open-air field conditions. Plant, Cell and Environment, 2006, 29, 2077-2090.	5.7	132
21	<i>Arabidopsis</i> transcript and metabolite profiles: ecotypeâ€specific responses to openâ€air elevated [CO₂]. Plant, Cell and Environment, 2008, 31, 1673-1687.	5.7	127
22	Impairment of C4 photosynthesis by drought is exacerbated by limiting nitrogen and ameliorated by elevated [CO2] in maize. Journal of Experimental Botany, 2011, 62, 3235-3246.	4.8	121
23	Long-term growth of soybean at elevated [CO2] does not cause acclimation of stomatal conductance under fully open-air conditions. Plant, Cell and Environment, 2006, 29, 1794-1800.	5.7	119
24	Tropical forest responses to increasing atmospheric CO2: current knowledge and opportunities for future research. Functional Plant Biology, 2013, 40, 531.	2.1	118
25	Physiological and ecological significance of sunflecks for dipterocarp seedlings. Journal of Experimental Botany, 2004, 56, 469-482.	4.8	112
26	Heat waves imposed during early pod development in soybean (<i><scp>G</scp>lycine max</i>) cause significant yield loss despite a rapid recovery from oxidative stress. Global Change Biology, 2015, 21, 3114-3125.	9.5	108
27	Does greater leafâ€level photosynthesis explain the larger solar energy conversion efficiency of Miscanthus relative to switchgrass?. Plant, Cell and Environment, 2009, 32, 1525-1537.	5.7	106
28	Does elevated atmospheric [CO2] alter diurnal C uptake and the balance of C and N metabolites in growing and fully expanded soybean leaves?. Journal of Experimental Botany, 2006, 58, 579-591.	4.8	102
29	Urgent need for a common metric to make precipitation manipulation experiments comparable. New Phytologist, 2012, 195, 518-522.	7.3	97
30	Evolutionary context for understanding and manipulating plant responses to past, present and future atmospheric [CO ₂]. Philosophical Transactions of the Royal Society B: Biological Sciences, 2012, 367, 613-629.	4.0	93
31	Abundance of introduced species at home predicts abundance away in herbaceous communities. Ecology Letters, 2011, 14, 274-281.	6.4	88
32	Increased protein carbonylation in leaves of Arabidopsis and soybean in response to elevated [CO2]. Photosynthesis Research, 2008, 97, 155-166.	2.9	82
33	Greater antioxidant and respiratory metabolism in fieldâ€grown soybean exposed to elevated O₃ under both ambient and elevated CO₂. Plant, Cell and Environment, 2012, 35, 169-184.	5.7	81
34	Relative enhancement of photosynthesis and growth at elevated CO2 is greater under sunflecks than uniform irradiance in a tropical rain forest tree seedling. Plant, Cell and Environment, 2002, 25, 1701-1714.	5.7	78
35	High-temperature inhibition of photosynthesis is greater under sunflecks than uniform irradiance in a tropical rain forest tree seedling. Plant, Cell and Environment, 2003, 26, 1681-1690.	5.7	76
36	Shifts in microbial communities in soil, rhizosphere and roots of two major crop systems under elevated CO2 and O3. Scientific Reports, 2017, 7, 15019.	3.3	75

#	Article	IF	Citations
37	Increasing drought and diminishing benefits of elevated carbon dioxide for soybean yields across the US Midwest. Global Change Biology, 2018, 24, e522-e533.	9.5	74
38	Future carbon dioxide concentration decreases canopy evapotranspiration and soil water depletion by fieldâ€grown maize. Global Change Biology, 2013, 19, 1572-1584.	9.5	71
39	Predicting invasion in grassland ecosystems: is exotic dominance the real embarrassment of richness?. Global Change Biology, 2013, 19, 3677-3687.	9.5	70
40	A multi-biome gap in understanding of crop and ecosystem responses to elevated CO2. Current Opinion in Plant Biology, 2012, 15, 228-236.	7.1	67
41	Diversity in stomatal function is integral to modelling plant carbon and water fluxes. Nature Ecology and Evolution, 2017, 1, 1292-1298.	7.8	67
42	Impacts of elevated atmospheric CO2 on nutrient content of important food crops. Scientific Data, 2015, 2, 150036.	5.3	66
43	High C3 photosynthetic capacity and high intrinsic water use efficiency underlies the high productivity of the bioenergy grass Arundo donax. Scientific Reports, 2016, 6, 20694.	3.3	64
44	How seasonal temperature or water inputs affect the relative response of C₃ crops to elevated [CO₂]: a global analysis of open top chamber and free air CO₂ enrichment studies. Food and Energy Security, 2014, 3, 33-45.	4.3	63
45	Impacts of elevated <scp><scp>CO</scp></scp>₂ concentration on the productivity and surface energy budget of the soybean and maize agroecosystem in the Midwest <scp>USA</scp>. Global Change Biology, 2013, 19, 2838-2852.	9.5	60
46	Time dependent genetic analysis links field and controlled environment phenotypes in the model C4 grass Setaria. PLoS Genetics, 2017, 13, e1006841.	3.5	53
47	Deleterious Mutation Burden and Its Association with Complex Traits in Sorghum (<i>Sorghum) Tj ETQq1 1 0.784314 rgBT /Overlock 10	2.9	51
48	Minirhizotron imaging reveals that nodulation of field-grown soybean is enhanced by free-air CO2 enrichment only when combined with drought stress. Functional Plant Biology, 2013, 40, 137.	2.1	48
49	Challenges in elevated CO2 experiments on forests. Trends in Plant Science, 2010, 15, 5-10.	8.8	46
50	Patterns of dynamic irradiance affect the photosynthetic capacity and growth of dipterocarp tree seedlings. Oecologia, 2003, 135, 184-193.	2.0	45
51	Nutrient addition increases grassland sensitivity to droughts. Ecology, 2020, 101, e02981.	3.2	44
52	Machine learning-enabled phenotyping for GWAS and TWAS of WUE traits in 869 field-grown sorghum accessions. Plant Physiology, 2021, 187, 1481-1500.	4.8	44
53	Transcriptional reprogramming and stimulation of leaf respiration by elevated <scp><scp>CO₂</scp></scp> concentration is diminished, but not eliminated, under limiting nitrogen supply. Plant, Cell and Environment, 2014, 37, 886-898.	5.7	42
54	Elevated ozone reduces photosynthetic carbon gain by accelerating leaf senescence of inbred and hybrid maize in a genotypeâ€specific manner. Plant, Cell and Environment, 2017, 40, 3088-3100.	5.7	40

#	Article	IF	Citations
55	Uncovering hidden genetic variation in photosynthesis of fieldâ€grown maize under ozone pollution. Global Change Biology, 2019, 25, 4327-4338.	9.5	39
56	Gene expression profiling: opening the black box of plant ecosystem responses to global change. Global Change Biology, 2009, 15, 1201-1213.	9.5	35
57	Climate modifies response of non-native and native species richness to nutrient enrichment. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150273.	4.0	34
58	Soil carbon stocks in temperate grasslands differ strongly across sites but are insensitive to decadeâ€long fertilization. Global Change Biology, 2022, 28, 1659-1677.	9.5	34
59	Optical topometry and machine learning to rapidly phenotype stomatal patterning traits for maize QTL mapping. Plant Physiology, 2021, 187, 1462-1480.	4.8	33
60	A physiological and biophysical model of coppice willow (<scp><i>S</i></scp><i>alix</i> spp.) production yields for the contiguous <scp>USA</scp> in current and future climate scenarios. Plant, Cell and Environment, 2015, 38, 1850-1865.	5.7	30
61	Photosynthesis in a CO2-Rich Atmosphere. Advances in Photosynthesis and Respiration, 2012, , 733-768.	1.0	28
62	Developmental stage specificity of transcriptional, biochemical and <scp><scp>CO₂</scp></scp> efflux responses of leaf dark respiration to growth of <scp><i>A</i></scp><i>rabidopsis thaliana</i> at elevated [<scp><scp>CO₂</scp></scp>]. Plant, Cell and Environment, 2014, 37, 2542-2552.	5.7	27
63	Effects of elevated CO2 and soil water content on phytohormone transcript induction in Glycine max after Popillia japonica feeding. Arthropod-Plant Interactions, 2012, 6, 439-447.	1.1	26
64	Novel Bayesian Networks for Genomic Prediction of Developmental Traits in Biomass Sorghum. G3: Genes, Genomes, Genetics, 2020, 10, 769-781.	1.8	25
65	Understanding Growth Dynamics and Yield Prediction of Sorghum Using High Temporal Resolution UAV Imagery Time Series and Machine Learning. Remote Sensing, 2021, 13, 1763.	4.0	25
66	Drivers of Natural Variation in Water-Use Efficiency Under Fluctuating Light Are Promising Targets for Improvement in Sorghum. Frontiers in Plant Science, 2021, 12, 627432.	3.6	24
67	Phenotyping stomatal closure by thermal imaging for GWAS and TWAS of water use efficiency-related genes. Plant Physiology, 2021, 187, 2544-2562.	4.8	23
68	Growth of soybean at future tropospheric ozone concentrations decreases canopy evapotranspiration and soil water depletion. Environmental Pollution, 2011, 159, 1464-1472.	7.5	22
69	A reporting format for leaf-level gas exchange data and metadata. Ecological Informatics, 2021, 61, 101232.	5.2	22
70	Inconsistency of mesophyll conductance estimate causes the inconsistency for the estimates of maximum rate of Rubisco carboxylation among the linear, rectangular and non-rectangular hyperbola biochemical models of leaf photosynthesisâ€"A case study of CO2 enrichment and leaf aging effects in soybean. Plant Science, 2014, 226, 49-60.	3.6	18
71	Can improved canopy light transmission ameliorate loss of photosynthetic efficiency in the shade? An investigation of natural variation in<i>Sorghum bicolor</i>. Journal of Experimental Botany, 2021, 72, 4965-4980.	4.8	16
72	Altered physiological function, not structure, drives increased radiation-use efficiency of soybean grown at elevated CO2. Photosynthesis Research, 2010, 105, 15-25.	2.9	13

#	Article	IF	Citations
73	Correlation and co-localization of QTL for stomatal density, canopy temperature, and productivity with and without drought stress in<i>Setaria</i>. Journal of Experimental Botany, 2021, 72, 5024-5037.	4.8	13
74	Similar photosynthetic response to elevated carbon dioxide concentration in species with different phloem loading strategies. Photosynthesis Research, 2018, 137, 453-464.	2.9	12
75	Highâ€fidelity detection of crop biomass quantitative trait loci from lowâ€cost imaging in the field. Plant Direct, 2018, 2, e00041.	1.9	11
76	Elevated CO2 and O3 modify N turnover rates, but not N2O emissions in a soybean agroecosystem. Soil Biology and Biochemistry, 2012, 51, 104-114.	8.8	10
77	Methamphetamine causes anorexia in <i>Drosophila melanogaster</i>, exhausting metabolic reserves and contributing to mortality. Journal of Toxicological Sciences, 2012, 37, 773-790.	1.5	9
78	Ageâ€dependent increase in Î±â€tocopherol and phytosterols in maize leaves exposed to elevated ozone pollution. Plant Direct, 2021, 5, e00307.	1.9	9
79	An improved representation of the relationship between photosynthesis and stomatal conductance leads to more stable estimation of conductance parameters and improves the goodnessâ€ofâ€fit across diverse data sets. Global Change Biology, 2022, 28, 3537-3556.	9.5	9
80	Functional genomics and ecology â€“ a tale of two scales. New Phytologist, 2007, 176, 735-739.	7.3	8
81	Installation and imaging of thousands of minirhizotrons to phenotype root systems of field-grown plants. Plant Methods, 2022, 18, 39.	4.3	8
82	Implementing Spatio-Temporal 3D-Convolution Neural Networks and UAV Time Series Imagery to Better Predict Lodging Damage in Sorghum. Remote Sensing, 2022, 14, 733.	4.0	6
83	Detecting Carbon Dioxide Emissions in Soybeans by Aerial Thermal Infrared Imagery. Photogrammetric Engineering and Remote Sensing, 2010, 76, 735-741.	0.6	5
84	Photosynthesis and the environment. Photosynthesis Research, 2014, 119, 1-2.	2.9	5
85	Plasticity in stomatal behaviour across a gradient of water supply is consistent among fieldâ€grown maize inbred lines with varying stomatal patterning. Plant, Cell and Environment, 2022, 45, 2324-2336.	5.7	5
86	Variation in leaf transcriptome responses to elevated ozone corresponds with physiological sensitivity to ozone across maize inbred lines. Genetics, 2022, 221, .	2.9	1
87	Plants in Changing Environmental Conditions of the Anthropocene. , 2014, , 533-572.		0
88	The Anthropocene: Plants in a New Environmental Domain. , 2014, , 1-33.		0
89	Plants in Changing Environmental Conditions of the Anthropocene. , 2015, , 1-32.		0