Elizabeth A Ainsworth

List of Publications by Year
in descending order

118	23,105	26630 56	22832 112
papers	citations	h-index	g-index

124	124	124	18058
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	What have we learned from 15 years of freeâ€air CO 2 enrichment (FACE)? A metaâ€analytic review of the responses of photosynthesis, canopy properties and plant production to rising CO 2. New Phytologist, 2005, 165, 351-372.	7.3	3,081
2	Estimation of total phenolic content and other oxidation substrates in plant tissues using Folinâ€“Ciocalteu reagent. Nature Protocols, 2007, 2, 875-877.	12.0	2,034
3	The response of photosynthesis and stomatal conductance to rising [CO2]: mechanisms and environmental interactions. Plant, Cell and Environment, 2007, 30, 258-270.	5.7	1,810
4	RISING ATMOSPHERIC CARBON DIOXIDE: Plants FACE the Future. Annual Review of Plant Biology, 2004, 55, 591-628.	18.7	1,472
5	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
6	Food for Thought: Lower-Than-Expected Crop Yield Stimulation with Rising CO2 Concentrations. Science, 2006, 312, 1918-1921.	12.6	1,299
7	Genetic strategies for improving crop yields. Nature, 2019, 575, 109-118.	27.8	799
8	The Effects of Tropospheric Ozone on Net Primary Productivity and Implications for Climate Change. Annual Review of Plant Biology, 2012, 63, 637-661.	18.7	661
9	Quantifying the impact of current and future tropospheric ozone on tree biomass, growth, physiology and biochemistry: a quantitative metaâ€analysis. Global Change Biology, 2009, 15, 396-424.	9.5	470
10	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
11	A meta-analysis of elevated [CO2] effects on soybean (Glycine max) physiology, growth and yield. Global Change Biology, 2002, 8, 695-709.	9.5	426
12	Rice production in a changing climate: a metaâ€analysis of responses to elevated carbon dioxide and elevated ozone concentration. Global Change Biology, 2008, 14, 1642-1650.	9.5	425
13	To what extent do current and projected increases in surface ozone affect photosynthesis and stomatal conductance of trees? A metaâ€analytic review of the last 3â€ƒdecades of experiments. Plant, Cell and Environment, 2007, 30, 1150-1162.	5.7	355
14	Impact of elevated ozone concentration on growth, physiology, and yield of wheat (<i>Triticum) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 2	9.5	339
15	Carbohydrate Export from the Leaf: A Highly Regulated Process and Target to Enhance Photosynthesis and Productivity. Plant Physiology, 2011, 155, 64-69.	4.8	318
16	Testing the â€œsourceâ€“sinkâ€• hypothesis of down-regulation of photosynthesis in elevated [CO2] in the field with single gene substitutions in Glycine max. Agricultural and Forest Meteorology, 2004, 122, 85-94.	4.8	311
17	Measurement of reduced, oxidized and total ascorbate content in plants. Nature Protocols, 2007, 2, 871-874.	12.0	258
18	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

#	Article	IF	Citations
19	Understanding and improving global crop response to ozone pollution. Plant Journal, 2017, 90, 886-897.	5.7	250
20	30 years of freeâ€air carbon dioxide enrichment (FACE): What have we learned about future crop productivity and its potential for adaptation?. Global Change Biology, 2021, 27, 27-49.	9.5	240
21	Intensifying drought eliminates the expected benefits of elevated carbon dioxide for soybean. Nature Plants, 2016, 2, 16132.	9.3	229
22	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
23	Will Elevated Carbon Dioxide Concentration Amplify the Benefits of Nitrogen Fixation in Legumes?. Plant Physiology, 2009, 151, 1009-1016.	4.8	220
24	How Do We Improve Crop Production in a Warming World?. Plant Physiology, 2010, 154, 526-530.	4.8	218
25	High-Throughput Phenotyping of Maize Leaf Physiological and Biochemical Traits Using Hyperspectral Reflectance. Plant Physiology, 2017, 173, 614-626.	4.8	215
26	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
27	Historical gains in soybean (Glycine max Merr.) seed yield are driven by linear increases in light interception, energy conversion, and partitioning efficiencies. Journal of Experimental Botany, 2014, 65, 3311-3321.	4.8	199
28	Rapid measurement of total antioxidant capacity in plants. Nature Protocols, 2007, 2, 867-870.	12.0	192
29	Leaf photosynthesis and carbohydrate dynamics of soybeans grown throughout their life-cycle under Free-Air Carbon dioxide Enrichment. Plant, Cell and Environment, 2004, 27, 449-458.	5.7	182
30	Towards a multiscale crop modelling framework for climate change adaptation assessment. Nature Plants, 2020, 6, 338-348.	9.3	181
31	Is stimulation of leaf photosynthesis by elevated carbon dioxide concentration maintained in the long term? A test with Lolium perenne grown for 10 years at two nitrogen fertilization levels under F ree A ir C O2 E nrichment (FACE). Plant, Cell and Environment, 2003, 26, 705-714.	5.7	172
32	Ozone effects on crops and consideration in crop models. European Journal of Agronomy, 2018, 100, 19-34.	4.1	170
33	Targets for Crop Biotechnology in a Future High-CO₂ and High-O₃ World. Plant Physiology, 2008, 147, 13-19.	4.8	164
34	Ozone pollution will compromise efforts to increase global wheat production. Global Change Biology, 2018, 24, 3560-3574.	9.5	163
35	An analysis of ozone damage to historical maize and soybean yields in the United States. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14390-14395.	7.1	159
36	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

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37	Accelerating yield potential in soybean: potential targets for biotechnological improvement. Plant, Cell and Environment, 2012, 35, 38-52.	5.7	153
38	The Effects of Elevated CO2 Concentration on Soybean Gene Expression. An Analysis of Growing and Mature Leaves. Plant Physiology, 2006, 142, 135-147.	4.8	142
39	High-throughput field phenotyping using hyperspectral reflectance and partial least squares regression (PLSR) reveals genetic modifications to photosynthetic capacity. Remote Sensing of Environment, 2019, 231, 111176.	11.0	123
40	Using leaf optical properties to detect ozone effects on foliar biochemistry. Photosynthesis Research, 2014, 119, 65-76.	2.9	121
41	Is there potential to adapt soybean (<scp>G</scp>lycine maxâ€¦<scp>M</scp>err.) to future [<scp><scp>CO₂</scp></scp>]? An analysis of the yield response of 18 genotypes in freeâ€air <scp><scp>CO₂</scp></scp> enrichment. Plant, Cell and Environment, 2015, 38, 1765-1774.	5.7	116
42	Quantifying the effects of ozone on plant reproductive growth and development. Global Change Biology, 2012, 18, 606-616.	9.5	110
43	Heat waves imposed during early pod development in soybean (<scp>G</scp>lycine max) cause significant yield loss despite a rapid recovery from oxidative stress. Global Change Biology, 2015, 21, 3114-3125.	9.5	108
44	Effects of chronic elevated ozone concentration on antioxidant capacity, photosynthesis and seed yield of 10 soybean cultivars. Plant, Cell and Environment, 2010, 33, no-no.	5.7	105
45	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
46	Growth at elevated ozone or elevated carbon dioxide concentration alters antioxidant capacity and response to acute oxidative stress in soybean (Glycine max). Journal of Experimental Botany, 2011, 62, 2667-2678.	4.8	100
47	Has photosynthetic capacity increased with 80â€‰years of soybean breeding? An examination of historical soybean cultivars. Plant, Cell and Environment, 2016, 39, 1058-1067.	5.7	96
48	The influence of rising tropospheric carbon dioxide and ozone on plant productivity. Plant Biology, 2020, 22, 5-11.	3.8	86
49	An investigation of widespread ozone damage to the soybean crop in the upper Midwest determined from ground-based and satellite measurements. Atmospheric Environment, 2010, 44, 2248-2256.	4.1	84
50	Ozone Exposure Response for U.S. Soybean Cultivars: Linear Reductions in Photosynthetic Potential, Biomass, and Yield Â Â. Plant Physiology, 2012, 160, 1827-1839.	4.8	83
51	Greater antioxidant and respiratory metabolism in fieldâ€grown soybean exposed to elevated ₃ under both ambient and elevated CO₂. Plant, Cell and Environment, 2012, 35, 169-184.	5.7	81
52	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
53	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
54	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

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55	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
56	Has the sensitivity of soybean cultivars to ozone pollution increased with time? An analysis of published doseâ€“response data. Global Change Biology, 2016, 22, 3097-3111.	9.5	61
57	Variation in acclimation of photosynthesis in Trifolium repens after eight years of exposure to Free Air CO2 Enrichment (FACE). Journal of Experimental Botany, 2003, 54, 2769-2774.	4.8	60
58	From climate change to molecular response: redox proteomics of ozoneâ€induced responses in soybean. New Phytologist, 2012, 194, 220-229.	7.3	57
59	Plot-level rapid screening for photosynthetic parameters using proximal hyperspectral imaging. Journal of Experimental Botany, 2020, 71, 2312-2328.	4.8	54
60	Simulating Agriculture in the Community Land Model Version 5. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2019JG005529.	3.0	53
61	Unique contributions of chlorophyll and nitrogen to predict crop photosynthetic capacity from leaf spectroscopy. Journal of Experimental Botany, 2021, 72, 341-354.	4.8	51
62	Direct Effects of Rising Atmospheric Carbon Dioxide and Ozone on Crop Yields. Advances in Global Change Research, 2010, , 109-130.	1.6	47
63	Challenges in elevated CO2 experiments on forests. Trends in Plant Science, 2010, 15, 5-10.	8.8	46
64	A meta-analysis of responses of canopy photosynthetic conversion efficiency to environmental factors reveals major causes of yield gap. Journal of Experimental Botany, 2013, 64, 3723-3733.	4.8	45
65	Variable selection in omics data: A practical evaluation of small sample sizes. PLoS ONE, 2018, 13, e0197910.	2.5	44
66	A comparative analysis of transcriptomic, biochemical, and physiological responses to elevated ozone identifies species-specific mechanisms of resilience in legume crops. Journal of Experimental Botany, 2015, 66, 7101-7112.	4.8	43
67	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
68	Uncovering hidden genetic variation in photosynthesis of fieldâ€grown maize under ozone pollution. Global Change Biology, 2019, 25, 4327-4338.	9.5	39
69	Elevated CO2 negates O3 impacts on terrestrial carbon and nitrogen cycles. One Earth, 2021, 4, 1752-1763.	6.8	38
70	Chronic ozone exacerbates the reduction in photosynthesis and acceleration of senescence caused by limited N availability in <scp>N</scp>icotiana sylvestris. Global Change Biology, 2013, 19, 3155-3166.	9.5	37
71	Quantifying highâ€temperature stress on soybean canopy photosynthesis: The unique role of sunâ€induced chlorophyll fluorescence. Global Change Biology, 2021, 27, 2403-2415.	9.5	36
72	LONG-TERM RESPONSE OF PHOTOSYNTHESIS TO ELEVATED CARBON DIOXIDE IN A FLORIDA SCRUB-OAK ECOSYSTEM. , 2002, 12, 1267-1275.		35

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73	Gene expression profiling: opening the black box of plant ecosystem responses to global change. Global Change Biology, 2009, 15, 1201-1213.	9.5	35
74	Rising ozone concentrations decrease soybean evapotranspiration and water use efficiency whilst increasing canopy temperature. New Phytologist, 2012, 195, 164-171.	7.3	33
75	Approaches to investigate crop responses to ozone pollution: from O₃â€FACE to satelliteâ€enabled modeling. Plant Journal, 2022, 109, 432-446.	5.7	32
76	The bench scientist's guide to statistical analysis of RNA-Seq data. BMC Research Notes, 2012, 5, 506.	1.4	30
77	Photosynthesis in a CO2-Rich Atmosphere. Advances in Photosynthesis and Respiration, 2012, , 733-768.	1.0	28
78	Physiological and transcriptomic responses in the seed coat of field-grown soybean (Glycine max L.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	3.6	28
79	Inoculation with an enhanced <scp>N</scp>₂â€fixing <scp>B</scp>radyrhizobium japonicum strain (<scp>USDA</scp>110) does not alter soybean (<scp>G</scp>lycine) Tj ETQq1 1 0.784314 rgBT /Ove and Environment, 2015, 38, 2589-2602.	5.7	27
80	Plant biochemistry influences tropospheric ozone formation, destruction, deposition, and response. Trends in Biochemical Sciences, 2021, 46, 992-1002.	7.5	27
81	Field assessment of a snap bean ozone bioindicator system under elevated ozone and carbon dioxide in a free air system. Environmental Pollution, 2012, 166, 167-171.	7.5	26
82	Leaf and canopy scale drivers of genotypic variation in soybean response to elevated carbon dioxide concentration. Global Change Biology, 2017, 23, 3908-3920.	9.5	26
83	A physiological signal derived from sun-induced chlorophyll fluorescence quantifies crop physiological response to environmental stresses in the U.S. Corn Belt. Environmental Research Letters, 2021, 16, 124051.	5.2	25
84	Metabolite and transcript profiling of Guinea grass (Panicum maximum Jacq) response to elevated [CO2] and temperature. Metabolomics, 2019, 15, 51.	3.0	24
85	Interannual variability of ecosystem iso/anisohydry is regulated by environmental dryness. New Phytologist, 2021, 229, 2562-2575.	7.3	23
86	Anticipated yield loss in field-grown soybean under elevated ozone can be avoided at the expense of leaf growth during early reproductive growth stages in favourable environmental conditions. Journal of Experimental Botany, 2006, 57, 2267-2275.	4.8	22
87	Phloem function: a key to understanding and manipulating plant responses to rising atmospheric [CO2]?. Current Opinion in Plant Biology, 2018, 43, 50-56.	7.1	22
88	A reporting format for leaf-level gas exchange data and metadata. Ecological Informatics, 2021, 61, 101232.	5.2	22
89	The clonal structure of Quercus geminata revealed by conserved microsatellite loci. Molecular Ecology, 2003, 12, 527-532.	3.9	21
90	Glycine max leaflets lack a base-tip gradient in growth rate. Journal of Plant Research, 2005, 118, 343-346.	2.4	21

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91	The Response of Foliar Carbohydrates to Elevated [CO2]. , 2006, , 293-308.		21
92	Changes in leaf area, nitrogen content and canopy photosynthesis in soybean exposed to an ozone concentration gradient. Environmental Pollution, 2016, 215, 347-355.	7.5	20
93	Ozone tolerant maize hybrids maintain Rubisco content and activity during longâ€term exposure in the field. Plant, Cell and Environment, 2020, 43, 3033-3047.	5.7	19
94	Predicting biochemical acclimation of leaf photosynthesis in soybean under inâ€field canopy warming using hyperspectral reflectance. Plant, Cell and Environment, 2022, 45, 80-94.	5.7	19
95	Advances in field-based high-throughput photosynthetic phenotyping. Journal of Experimental Botany, 2022, 73, 3157-3172.	4.8	17
96	The importance of intraspecific variation in tree responses to elevated [CO₂]: breeding and management of future forests. Tree Physiology, 2016, 36, 679-681.	3.1	16
97	SoyFACE: the Effects and Interactions of Elevated [CO2] and [O3] on Soybean. , 2006, , 71-86.		16
98	Elevated Ozone Concentration Reduces Photosynthetic Carbon Gain but Does Not Alter Leaf Structural Traits, Nutrient Composition or Biomass in Switchgrass. Plants, 2019, 8, 85.	3.5	15
99	Distinct transcriptional profiles of ozone stress in soybean (Glycine max) flowers and pods. BMC Plant Biology, 2014, 14, 335.	3.6	14
100	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
101	Similar photosynthetic response to elevated carbon dioxide concentration in species with different phloem loading strategies. Photosynthesis Research, 2018, 137, 453-464.	2.9	12
102	Bioenergy sorghum maintains photosynthetic capacity in elevated ozone concentrations. Plant, Cell and Environment, 2021, 44, 729-746.	5.7	12
103	Testing unified theories for ozone response in C₄ species. Global Change Biology, 2022, 28, 3379-3393.	9.5	12
104	Weed interference with fieldâ€grown soyabean decreases under elevated [CO₂] in a FACE experiment. Weed Research, 2012, 52, 277-285.	1.7	11
105	Examining Genetic Variation in Maize Inbreds and Mapping Oxidative Stress Response QTL in B73-Mo17 Nearly Isogenic Lines. Frontiers in Sustainable Food Systems, 2019, 3, .	3.9	9
106	Assessing diversity in canopy architecture, photosynthesis, and waterâ€use efficiency in a cowpea magic population. Food and Energy Security, 2020, 9, e236.	4.3	9
107	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
108	Airborne hyperspectral imaging of nitrogen deficiency on crop traits and yield of maize by machine learning and radiative transfer modeling. International Journal of Applied Earth Observation and Geoinformation, 2021, 105, 102617.	2.8	9

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109	Distinct transcriptional profiles of ozone stress in soybean (Glycine max) flowers and pods. BMC Plant Biology, 2014, 14, 335.	3.6	8
110	High-throughput characterization, correlation, and mapping of leaf photosynthetic and functional traits in the soybean (Glycine max) nested association mapping population. Genetics, 2022, , .	2.9	8
111	Elevated carbon dioxide reduces a common soybean leaf endophyte. Global Change Biology, 2021, 27, 4154-4168.	9.5	6
112	Cowpea leaf width correlates with above ground biomass across diverse environments. , 2022, 4, .		5
113	Physiological trait networks enhance understanding of crop growth and water use in contrasting environments. Plant, Cell and Environment, 2022, 45, 2554-2572.	5.7	5
114	Enhanced drought resistance of vegetation growth in cities due to urban heat, CO₂ domes and O₃ troughs. Environmental Research Letters, 2021, 16, 124052.	5.2	4
115	Calibrating soybean parameters in JULES 5.0 from the US-Ne2/3 FLUXNET sites and the SoyFACE-O₃ experiment. Geoscientific Model Development, 2020, 13, 6201-6213.	3.6	3
116	Variation in leaf transcriptome responses to elevated ozone corresponds with physiological sensitivity to ozone across maize inbred lines. Genetics, 2022, 221, .	2.9	1
117	Editorial overview: Harnessing genetic variation in metabolic traits to understand trait evolution and improve the sustainability of crop production. Current Opinion in Plant Biology, 2019, 49, A1-A3.	7.1	0
118	The Bench Scientistâ€™s Guide to Statistical Analysis of RNA-Seq Data. , 2014, , 1-20.		0