Donald R Ort

List of Publications by Year
in descending order

102 papers	18,877 citations	31976 53 h-index	32842 100 g-index
104 all docs	104 docs citations	104 times ranked	16241 citing authors

#	Article	IF	Citations
1	RISING ATMOSPHERIC CARBON DIOXIDE: Plants FACE the Future. Annual Review of Plant Biology, 2004, 55, 591-628.	18.7	1,472
2	Improving Photosynthetic Efficiency for Greater Yield. Annual Review of Plant Biology, 2010, 61, 235-261.	18.7	1,410
3	Comparing Photosynthetic and Photovoltaic Efficiencies and Recognizing the Potential for Improvement. Science, 2011, 332, 805-809.	12.6	1,369
4	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
5	Food for Thought: Lower-Than-Expected Crop Yield Stimulation with Rising CO2 Concentrations. Science, 2006, 312, 1918-1921.	12.6	1,299
6	Can improvement in photosynthesis increase crop yields?. Plant, Cell and Environment, 2006, 29, 315-330.	5.7	1,236
7	What is the maximum efficiency with which photosynthesis can convert solar energy into biomass?. Current Opinion in Biotechnology, 2008, 19, 153-159.	6.6	897
8	Redesigning photosynthesis to sustainably meet global food and bioenergy demand. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8529-8536.	7.1	751
9	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
10	Synthetic glycolate metabolism pathways stimulate crop growth and productivity in the field. Science, 2019, 363, .	12.6	437
11	A photoprotective role for O2 as an alternative electron sink in photosynthesis?. Current Opinion in Plant Biology, 2002, 5, 193-198.	7.1	386
12	When There Is Too Much Light: Fig. 1.. Plant Physiology, 2001, 125, 29-32.	4.8	316
13	More than taking the heat: crops and global change. Current Opinion in Plant Biology, 2010, 13, 240-247.	7.1	309
14	The Costs of Photorespiration to Food Production Now and in the Future. Annual Review of Plant Biology, 2016, 67, 107-129.	18.7	277
15	Optimizing Antenna Size to Maximize Photosynthetic Efficiency. Plant Physiology, 2011, 155, 79-85.	4.8	266
16	The slow reversibility of photosystem II thermal energy dissipation on transfer from high to low light may cause large losses in carbon gain by crop canopies: a theoretical analysis. Journal of Experimental Botany, 2004, 55, 1167-1175.	4.8	258
17	Chlorophyll a fluorescence induction kinetics in leaves predicted from a model describing each discrete step of excitation energy and electron transfer associated with Photosystem II. Planta, 2005, 223, 114-133.	3.2	252
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

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19	Decreases in Stomatal Conductance of Soybean under Open-Air Elevation of [CO2] Are Closely Coupled with Decreases in Ecosystem Evapotranspiration. Plant Physiology, 2007, 143, 134-144.	4.8	233
20	Intensifying drought eliminates the expected benefits of elevated carbon dioxide for soybean. Nature Plants, 2016, 2, 16132.	9.3	229
21	How Do We Improve Crop Production in a Warming World?. Plant Physiology, 2010, 154, 526-530.	4.8	218
22	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
23	The Impacts of Fluctuating Light on Crop Performance. Plant Physiology, 2018, 176, 990-1003.	4.8	182
24	The growth of soybean under free air [CO2] enrichment (FACE) stimulates photosynthesis while decreasing in vivo Rubisco capacity. Planta, 2005, 220, 434-446.	3.2	181
25	Photosystem II Subunit S overexpression increases the efficiency of water use in a field-grown crop. Nature Communications, 2018, 9, 868.	12.8	181
26	Towards a multiscale crop modelling framework for climate change adaptation assessment. Nature Plants, 2020, 6, 338-348.	9.3	181
27	Increased C availability at elevated carbon dioxide concentration improves N assimilation in a legume. Plant, Cell and Environment, 2006, 29, 1651-1658.	5.7	172
28	Global Warming Can Negate the Expected CO2 Stimulation in Photosynthesis and Productivity for Soybean Grown in the Midwestern United States Â Â. Plant Physiology, 2013, 162, 410-423.	4.8	161
29	Differential responses in two varieties of winter wheat to elevated ozone concentration under fully open-air field conditions. Global Change Biology, 2011, 17, 580-591.	9.5	159
30	Over-expressing the C3 photosynthesis cycle enzyme Sedoheptulose-1-7 Bisphosphatase improves photosynthetic carbon gain and yield under fully open air CO2fumigation (FACE). BMC Plant Biology, 2011, 11, 123.	3.6	156
31	Variation in measured values of photosynthetic quantum yield in ecophysiological studies. Oecologia, 2001, 128, 15-23.	2.0	142
32	An In Vivo Analysis of the Effect of Season-Long Open-Air Elevation of Ozone to Anticipated 2050 Levels on Photosynthesis in Soybean. Plant Physiology, 2004, 135, 2348-2357.	4.8	135
33	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
34	Limits on Yields in the Corn Belt. Science, 2014, 344, 484-485.	12.6	132
35	Manipulating photorespiration to increase plant productivity: recent advances and perspectives for crop improvement. Journal of Experimental Botany, 2016, 67, 2977-2988.	4.8	127
36	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

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37	<i>e</i>â€photosynthesis: a comprehensive dynamic mechanistic model of C3 photosynthesis: from light capture to sucrose synthesis. Plant, Cell and Environment, 2013, 36, 1711-1727.	5.7	118
38	Photosynthesis, Light Use Efficiency, and Yield of Reduced-Chlorophyll Soybean Mutants in Field Conditions. Frontiers in Plant Science, 2017, 8, 549.	3.6	114
39	Canopy warming caused photosynthetic acclimation and reduced seed yield in maize grown at ambient and elevated [<scp>CO</scp>₂]. Global Change Biology, 2015, 21, 4237-4249.	9.5	111
40	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
41	Chlorophyll Can Be Reduced in Crop Canopies with Little Penalty to Photosynthesis. Plant Physiology, 2018, 176, 1215-1232.	4.8	99
42	Elements of a dynamic systems model of canopy photosynthesis. Current Opinion in Plant Biology, 2012, 15, 237-244.	7.1	83
43	Differential Effects of Chilling-Induced Photooxidation on the Redox Regulation of Photosynthetic Enzymesâ€. Biochemistry, 2000, 39, 6679-6688.	2.5	81
44	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
45	The impact of modifying photosystem antenna size on canopy photosynthetic efficiencyâ€"Development of a new canopy photosynthesis model scaling from metabolism to canopy level processes. Plant, Cell and Environment, 2017, 40, 2946-2957.	5.7	81
46	Chilling Delays Circadian Pattern of Sucrose Phosphate Synthase and Nitrate Reductase Activity in Tomato1. Plant Physiology, 1998, 118, 149-158.	4.8	80
47	Simulated heat waves during maize reproductive stages alter reproductive growth but have no lasting effect when applied during vegetative stages. Agriculture, Ecosystems and Environment, 2017, 240, 162-170.	5.3	73
48	Cassava aboutâ€<scp>FACE</scp>: Greater than expected yield stimulation of cassava (<i><scp>M</scp>anihot esculenta</i>) by future <scp>CO</scp>₂ levels. Global Change Biology, 2012, 18, 2661-2675.	9.5	68
49	The Role of Sink Strength and Nitrogen Availability in the Down-Regulation of Photosynthetic Capacity in Field-Grown Nicotiana tabacum L. at Elevated CO2 Concentration. Frontiers in Plant Science, 2017, 8, 998.	3.6	64
50	Expression of cyanobacterial FBP/SBPase in soybean prevents yield depression under future climate conditions. Journal of Experimental Botany, 2017, 68, erw435.	4.8	61
51	Recycling Carbon Dioxide during Xylose Fermentation by Engineered <i>Saccharomyces cerevisiae</i>. ACS Synthetic Biology, 2017, 6, 276-283.	3.8	60
52	Photosynthetic Energy Conversion Efficiency: Setting a Baseline for Gauging Future Improvements in Important Food and Biofuel Crops. Plant Physiology, 2015, 168, 383-392.	4.8	58
53	Optimizing photorespiration for improved crop productivity. Journal of Integrative Plant Biology, 2018, 60, 1217-1230.	8.5	58
54	Identical Substitutions in Magnesium Chelatase Paralogs Result in Chlorophyll-Deficient Soybean Mutants. G3: Genes, Genomes, Genetics, 2015, 5, 123-131.	1.8	57

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55	Bile Acid Sodium Symporter BASS6 Can Transport Glycolate and Is Involved in Photorespiratory Metabolism in <i>Arabidopsis thaliana</i>. Plant Cell, 2017, 29, 808-823.	6.6	56
56	Examining Cassavaâ€™s Potential to Enhance Food Security Under Climate Change. Tropical Plant Biology, 2012, 5, 30-38.	1.9	55
57	FACE-ing the global change: Opportunities for improvement in photosynthetic radiation use efficiency and crop yield. Plant Science, 2009, 177, 511-522.	3.6	54
58	Diurnal regulation of photosynthesis in understory saplings. New Phytologist, 2000, 145, 39-49.	7.3	52
59	Leaf hydraulic conductance declines in coordination with photosynthesis, transpiration and leaf water status as soybean leaves age regardless of soil moisture. Journal of Experimental Botany, 2014, 65, 6617-6627.	4.8	52
60	Carbon assimilation in crops at high temperatures. Plant, Cell and Environment, 2019, 42, 2750-2758.	5.7	52
61	The Role of Pheophorbide a Oxygenase Expression and Activity in the Canola Green Seed Problem. Plant Physiology, 2006, 142, 88-97.	4.8	51
62	The influence of photosynthetic acclimation to rising CO₂ and warmer temperatures on leaf and canopy photosynthesis models. Global Biogeochemical Cycles, 2015, 29, 194-206.	4.9	51
63	Perspectives on improving light distribution and light use efficiency in crop canopies. Plant Physiology, 2021, 185, 34-48.	4.8	50
64	The recovery of photosynthesis in tomato subsequent to chilling exposure. Photosynthesis Research, 1985, 6, 121-132.	2.9	48
65	Yield response of fieldâ€grown soybean exposed to heat waves under current and elevated [CO₂]. Global Change Biology, 2019, 25, 4352-4368.	9.5	47
66	Improved method for measuring the apparent <scp>CO</scp>₂ photocompensation point resolves the impact of multiple internal conductances to <scp>CO</scp>₂ to net gas exchange. Plant, Cell and Environment, 2015, 38, 2462-2474.	5.7	46
67	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
68	Impacts of rising tropospheric ozone on photosynthesis and metabolite levels on field grown soybean. Plant Science, 2014, 226, 147-161.	3.6	45
69	Photosynthetic terpene hydrocarbon production for fuels and chemicals. Plant Biotechnology Journal, 2015, 13, 137-146.	8.3	45
70	Are we approaching a water ceiling to maize yields in the United States?. Ecosphere, 2019, 10, e02773.	2.2	42
71	Biochemical acclimation, stomatal limitation and precipitation patterns underlie decreases in photosynthetic stimulation of soybean (Glycine max) at elevated [CO2] and temperatures under fully open air field conditions. Plant Science, 2014, 226, 136-146.	3.6	37
72	Light sheet microscopy reveals more gradual light attenuation in light-green versus dark-green soybean leaves. Journal of Experimental Botany, 2016, 67, 4697-4709.	4.8	37

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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	Investigating the Control of Chlorophyll Degradation by Genomic Correlation Mining. PLoS ONE, 2016, 11, e0162327.	2.5	33
75	Alternative pathway to photorespiration protects growth and productivity at elevated temperatures in a model crop. Plant Biotechnology Journal, 2022, 20, 711-721.	8.3	33
76	A wish list for synthetic biology in photosynthesis research. Journal of Experimental Botany, 2020, 71, 2219-2225.	4.8	31
77	Physiological evidence for plasticity in glycolate/glycerate transport during photorespiration. Photosynthesis Research, 2016, 129, 93-103.	2.9	30
78	Photosynthesis: ancient, essential, complex, diverse â€¦ and in need of improvement in a changing world. New Phytologist, 2017, 213, 43-47.	7.3	30
79	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
80	Cooperation among electron-transfer complexes in ATP synthesis in chloroplasts. FEBS Journal, 1985, 149, 503-510.	0.2	25
81	High sink strength prevents photosynthetic down-regulation in cassava grown at elevated CO2 concentration. Journal of Experimental Botany, 2021, 72, 542-560.	4.8	25
82	Canopy warming accelerates development in soybean and maize, offsetting the delay in soybean reproductive development by elevated CO₂ concentrations. Plant, Cell and Environment, 2018, 41, 2806-2820.	5.7	22
83	In vivo evidence for a regulatory role of phosphorylation of <i>Arabidopsis</i> Rubisco activase at the Thr78 site. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18723-18731.	7.1	22
84	Microalgal metabolic engineering strategies for the production of fuels and chemicals. Bioresource Technology, 2022, 345, 126529.	9.6	22
85	An improved approach for measuring the impact of multiple CO₂ conductances on the apparent photorespiratory CO₂ compensation point through slopeâ€“intercept regression. Plant, Cell and Environment, 2016, 39, 1198-1203.	5.7	21
86	A role for differential Rubisco activase isoform expression in C₄ bioenergy grasses at high temperature. GCB Bioenergy, 2021, 13, 211-223.	5.6	21
87	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
88	Uncertainty in measurements of the photorespiratory CO2 compensation point and its impact on models of leaf photosynthesis. Photosynthesis Research, 2017, 132, 245-255.	2.9	16
89	Lâ€malic acid production from xylose by engineered <i>Saccharomyces cerevisiae</i>. Biotechnology Journal, 2022, 17, e2000431.	3.5	16
90	The Plastid Casein Kinase 2 Phosphorylates Rubisco Activase at the Thr-78 Site but Is Not Essential for Regulation of Rubisco Activation State. Frontiers in Plant Science, 2016, 7, 404.	3.6	15

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91	Energy and carbon accounting to compare bioenergy crops. Current Opinion in Biotechnology, 2013, 24, 369-375.	6.6	13
92	The photosynthetic response of C₃ and C₄ bioenergy grass species to fluctuating light. GCB Bioenergy, 2022, 14, 37-53.	5.6	13
93	Chilling-Induced Limitations on Photosynthesis in Warm Climate Plants: Contrasting Mechanisms.. Seibutsu Kankyo Chosetsu [Environment Control in Biology, 2002, 40, 7-18.	0.2	12
94	Photoautotrophic organic acid production: Glycolic acid production by microalgal cultivation. Chemical Engineering Journal, 2022, 433, 133636.	12.7	12
95	Soybean photosynthetic and biomass responses to carbon dioxide concentrations ranging from pre-industrial to the distant future. Journal of Experimental Botany, 2020, 71, 3690-3700.	4.8	11
96	Colin A. Wraight, 1945â€"2014. Photosynthesis Research, 2016, 127, 237-256.	2.9	9
97	Arabidopsis plants expressing only the redoxâ€regulated Rcaâ€Î± isoform have constrained photosynthesis and plant growth. Plant Journal, 2020, 103, 2250-2262.	5.7	7
98	Glycolate production by a Chlamydomonas reinhardtii mutant lacking carbon-concentrating mechanism. Journal of Biotechnology, 2021, 335, 39-46.	3.8	7
99	Perspective: Understanding the Intersection of Climate/Environmental Change, Health, Agriculture, and Improved Nutrition â€" A Case Study: Type 2 Diabetes. Advances in Nutrition, 2019, 10, 731-738.	6.4	5
100	A phytophotonic approach to enhanced photosynthesis. Energy and Environmental Science, 2020, 13, 4794-4807.	30.8	5
101	Economical synthesis of 14C-labeled aminolevulinic acid for specific in situ labeling of plant tetrapyrroles. Photosynthesis Research, 2019, 142, 241-247.	2.9	0
102	Photosynthetic Efficiency Improvement. , 2020, , 256-256.		0