

Donald R Ort

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

101 papers	14,501 citations	47 h-index	104 g-index
104 ext. papers	16,997 ext. citations	9.4 avg, IF	6.73 L-index

#	Paper	IF	Citations
101	Rising atmospheric carbon dioxide: plants FACE the future. <i>Annual Review of Plant Biology</i> , 2004 , 55, 591-628	30.7	1251
100	Comparing photosynthetic and photovoltaic efficiencies and recognizing the potential for improvement. <i>Science</i> , 2011 , 332, 805-9	33.3	1143
99	Elevated CO ₂ effects on plant carbon, nitrogen, and water relations: six important lessons from FACE. <i>Journal of Experimental Botany</i> , 2009 , 60, 2859-76	7	1091
98	Food for thought: lower-than-expected crop yield stimulation with rising CO ₂ concentrations. <i>Science</i> , 2006 , 312, 1918-21	33.3	1086
97	Improving photosynthetic efficiency for greater yield. <i>Annual Review of Plant Biology</i> , 2010 , 61, 235-61	30.7	1039
96	Can improvement in photosynthesis increase crop yields?. <i>Plant, Cell and Environment</i> , 2006 , 29, 315-30	8.4	922
95	What is the maximum efficiency with which photosynthesis can convert solar energy into biomass?. <i>Current Opinion in Biotechnology</i> , 2008 , 19, 153-9	11.4	685
94	Redesigning photosynthesis to sustainably meet global food and bioenergy demand. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 8529-36	11.5	515
93	Photosynthesis, productivity, and yield of maize are not affected by open-air elevation of CO ₂ concentration in the absence of drought. <i>Plant Physiology</i> , 2006 , 140, 779-90	6.6	378
92	A photoprotective role for O ₂ as an alternative electron sink in photosynthesis?. <i>Current Opinion in Plant Biology</i> , 2002 , 5, 193-8	9.9	363
91	Synthetic glycolate metabolism pathways stimulate crop growth and productivity in the field. <i>Science</i> , 2019 , 363,	33.3	272
90	When there is too much light. <i>Plant Physiology</i> , 2001 , 125, 29-32	6.6	262
89	More than taking the heat: crops and global change. <i>Current Opinion in Plant Biology</i> , 2010 , 13, 241-8	9.9	255
88	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. <i>Planta</i> , 2005 , 223, 114-133	4.7	213
87	FACE-ing the facts: inconsistencies and interdependence among field, chamber and modeling studies of elevated [CO ₂] impacts on crop yield and food supply. <i>New Phytologist</i> , 2008 , 179, 5-9	9.8	210
86	Optimizing antenna size to maximize photosynthetic efficiency. <i>Plant Physiology</i> , 2011 , 155, 79-85	6.6	205
85	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. <i>Journal of Experimental Botany</i> , 2004 , 55, 1167-75	7	204

84	Decreases in stomatal conductance of soybean under open-air elevation of [CO ₂] are closely coupled with decreases in ecosystem evapotranspiration. <i>Plant Physiology</i> , 2007 , 143, 134-44	6.6	193
83	The Costs of Photorespiration to Food Production Now and in the Future. <i>Annual Review of Plant Biology</i> , 2016 , 67, 107-29	30.7	182
82	Intensifying drought eliminates the expected benefits of elevated carbon dioxide for soybean. <i>Nature Plants</i> , 2016 , 2, 16132	11.5	172
81	Genomic basis for stimulated respiration by plants growing under elevated carbon dioxide. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 3597-602	11.5	172
80	How do we improve crop production in a warming world?. <i>Plant Physiology</i> , 2010 , 154, 526-30	6.6	169
79	The growth of soybean under free air [CO(2)] enrichment (FACE) stimulates photosynthesis while decreasing in vivo Rubisco capacity. <i>Planta</i> , 2005 , 220, 434-46	4.7	157
78	Increased C availability at elevated carbon dioxide concentration improves N assimilation in a legume. <i>Plant, Cell and Environment</i> , 2006 , 29, 1651-8	8.4	148
77	Differential responses in two varieties of winter wheat to elevated ozone concentration under fully open-air field conditions. <i>Global Change Biology</i> , 2011 , 17, 580-591	11.4	127
76	Global warming can negate the expected CO ₂ stimulation in photosynthesis and productivity for soybean grown in the Midwestern United States. <i>Plant Physiology</i> , 2013 , 162, 410-23	6.6	124
75	Over-expressing the C(3) photosynthesis cycle enzyme Sedoheptulose-1-7 Bisphosphatase improves photosynthetic carbon gain and yield under fully open air CO(2) fumigation (FACE). <i>BMC Plant Biology</i> , 2011 , 11, 123	5.3	124
74	An in vivo analysis of the effect of season-long open-air elevation of ozone to anticipated 2050 levels on photosynthesis in soybean. <i>Plant Physiology</i> , 2004 , 135, 2348-57	6.6	121
73	Variation in measured values of photosynthetic quantum yield in ecophysiological studies. <i>Oecologia</i> , 2001 , 128, 15-23	2.9	121
72	Photosystem II Subunit S overexpression increases the efficiency of water use in a field-grown crop. <i>Nature Communications</i> , 2018 , 9, 868	17.4	119
71	Hourly and seasonal variation in photosynthesis and stomatal conductance of soybean grown at future CO(2) and ozone concentrations for 3 years under fully open-air field conditions. <i>Plant, Cell and Environment</i> , 2006 , 29, 2077-90	8.4	117
70	The Impacts of Fluctuating Light on Crop Performance. <i>Plant Physiology</i> , 2018 , 176, 990-1003	6.6	98
69	Botany. Limits on yields in the Corn Belt. <i>Science</i> , 2014 , 344, 484-5	33.3	93
68	Long-term growth of soybean at elevated [CO ₂] does not cause acclimation of stomatal conductance under fully open-air conditions. <i>Plant, Cell and Environment</i> , 2006 , 29, 1794-800	8.4	93
67	Manipulating photorespiration to increase plant productivity: recent advances and perspectives for crop improvement. <i>Journal of Experimental Botany</i> , 2016 , 67, 2977-88	7	90

66	Canopy warming caused photosynthetic acclimation and reduced seed yield in maize grown at ambient and elevated [CO ₂]. <i>Global Change Biology</i> , 2015 , 21, 4237-49	11.4	86
65	e-Photosynthesis: a comprehensive dynamic mechanistic model of C ₃ photosynthesis: from light capture to sucrose synthesis. <i>Plant, Cell and Environment</i> , 2013 , 36, 1711-27	8.4	84
64	Towards a multiscale crop modelling framework for climate change adaptation assessment. <i>Nature Plants</i> , 2020 , 6, 338-348	11.5	72
63	Greater antioxidant and respiratory metabolism in field-grown soybean exposed to elevated O ₃ under both ambient and elevated CO ₂ . <i>Plant, Cell and Environment</i> , 2012 , 35, 169-84	8.4	71
62	Heat waves imposed during early pod development in soybean (<i>Glycine max</i>) cause significant yield loss despite a rapid recovery from oxidative stress. <i>Global Change Biology</i> , 2015 , 21, 3114-25	11.4	70
61	Differential effects of chilling-induced photooxidation on the redox regulation of photosynthetic enzymes. <i>Biochemistry</i> , 2000 , 39, 6679-88	3.2	70
60	Chilling delays circadian pattern of sucrose phosphate synthase and nitrate reductase activity in tomato. <i>Plant Physiology</i> , 1998 , 118, 149-58	6.6	69
59	Elements of a dynamic systems model of canopy photosynthesis. <i>Current Opinion in Plant Biology</i> , 2012 , 15, 237-44	9.9	64
58	Cassava abiotic-FACE: Greater than expected yield stimulation of cassava (<i>Manihot esculenta</i>) by future CO ₂ levels. <i>Global Change Biology</i> , 2012 , 18, 2661-2675	11.4	59
57	Photosynthesis, Light Use Efficiency, and Yield of Reduced-Chlorophyll Soybean Mutants in Field Conditions. <i>Frontiers in Plant Science</i> , 2017 , 8, 549	6.2	58
56	Chlorophyll Can Be Reduced in Crop Canopies with Little Penalty to Photosynthesis. <i>Plant Physiology</i> , 2018 , 176, 1215-1232	6.6	54
55	The impact of modifying photosystem antenna size on canopy photosynthetic efficiency-Development of a new canopy photosynthesis model scaling from metabolism to canopy level processes. <i>Plant, Cell and Environment</i> , 2017 , 40, 2946-2957	8.4	51
54	Simulated heat waves during maize reproductive stages alter reproductive growth but have no lasting effect when applied during vegetative stages. <i>Agriculture, Ecosystems and Environment</i> , 2017 , 240, 162-170	5.7	47
53	The Role of Sink Strength and Nitrogen Availability in the Down-Regulation of Photosynthetic Capacity in Field-Grown L. at Elevated CO Concentration. <i>Frontiers in Plant Science</i> , 2017 , 8, 998	6.2	45
52	FACE-ing the global change: Opportunities for improvement in photosynthetic radiation use efficiency and crop yield. <i>Plant Science</i> , 2009 , 177, 511-522	5.3	45
51	Examining Cassava's Potential to Enhance Food Security Under Climate Change. <i>Tropical Plant Biology</i> , 2012 , 5, 30-38	1.6	44
50	The recovery of photosynthesis in tomato subsequent to chilling exposure. <i>Photosynthesis Research</i> , 1985 , 6, 121-32	3.7	44
49	Photosynthetic energy conversion efficiency: setting a baseline for gauging future improvements in important food and biofuel crops. <i>Plant Physiology</i> , 2015 , 168, 383-92	6.6	43

48	The role of pheophorbide a oxygenase expression and activity in the canola green seed problem. <i>Plant Physiology</i> , 2006 , 142, 88-97	6.6	43
47	Expression of cyanobacterial FBP/SBPase in soybean prevents yield depression under future climate conditions. <i>Journal of Experimental Botany</i> , 2017 , 68, 715-726	7	43
46	Recycling Carbon Dioxide during Xylose Fermentation by Engineered <i>Saccharomyces cerevisiae</i> . <i>ACS Synthetic Biology</i> , 2017 , 6, 276-283	5.7	41
45	Leaf hydraulic conductance declines in coordination with photosynthesis, transpiration and leaf water status as soybean leaves age regardless of soil moisture. <i>Journal of Experimental Botany</i> , 2014 , 65, 6617-27	7	41
44	Diurnal regulation of photosynthesis in understory saplings. <i>New Phytologist</i> , 2000 , 145, 39-49	9.8	40
43	Bile Acid Sodium Symporter BASS6 Can Transport Glycolate and Is Involved in Photorespiratory Metabolism in. <i>Plant Cell</i> , 2017 , 29, 808-823	11.6	39
42	Photosynthetic terpene hydrocarbon production for fuels and chemicals. <i>Plant Biotechnology Journal</i> , 2015 , 13, 137-46	11.6	39
41	Impacts of rising tropospheric ozone on photosynthesis and metabolite levels on field grown soybean. <i>Plant Science</i> , 2014 , 226, 147-61	5.3	39
40	Improved method for measuring the apparent CO ₂ photocompensation point resolves the impact of multiple internal conductances to CO ₂ to net gas exchange. <i>Plant, Cell and Environment</i> , 2015 , 38, 2462-74	8.4	38
39	The influence of photosynthetic acclimation to rising CO ₂ and warmer temperatures on leaf and canopy photosynthesis models. <i>Global Biogeochemical Cycles</i> , 2015 , 29, 194-206	5.9	35
38	Identical substitutions in magnesium chelatase paralogs result in chlorophyll-deficient soybean mutants. <i>G3: Genes, Genomes, Genetics</i> , 2014 , 5, 123-31	3.2	33
37	Gene expression profiling: opening the black box of plant ecosystem responses to global change. <i>Global Change Biology</i> , 2009 , 15, 1201-1213	11.4	33
36	Optimizing photorespiration for improved crop productivity. <i>Journal of Integrative Plant Biology</i> , 2018 , 60, 1217-1230	8.3	32
35	Biochemical acclimation, stomatal limitation and precipitation patterns underlie decreases in photosynthetic stimulation of soybean (<i>Glycine max</i>) at elevated [CO ₂] and temperatures under fully open air field conditions. <i>Plant Science</i> , 2014 , 226, 136-46	5.3	32
34	A meta-analysis of responses of canopy photosynthetic conversion efficiency to environmental factors reveals major causes of yield gap. <i>Journal of Experimental Botany</i> , 2013 , 64, 3723-33	7	32
33	Carbon assimilation in crops at high temperatures. <i>Plant, Cell and Environment</i> , 2019 , 42, 2750-2758	8.4	30
32	Light sheet microscopy reveals more gradual light attenuation in light-green versus dark-green soybean leaves. <i>Journal of Experimental Botany</i> , 2016 , 67, 4697-709	7	26
31	Are we approaching a water ceiling to maize yields in the United States?. <i>Ecosphere</i> , 2019 , 10, e02773	3.1	24

30	Cooperation among electron-transfer complexes in ATP synthesis in chloroplasts. <i>FEBS Journal</i> , 1985 , 149, 503-10		24
29	Physiological evidence for plasticity in glycolate/glycerate transport during photorespiration. <i>Photosynthesis Research</i> , 2016 , 129, 93-103	3.7	24
28	Photosynthesis: ancient, essential, complex, diverse and in need of improvement in a changing world. <i>New Phytologist</i> , 2017 , 213, 43-47	9.8	21
27	Yield response of field-grown soybean exposed to heat waves under current and elevated [CO ₂]. <i>Global Change Biology</i> , 2019 , 25, 4352-4368	11.4	19
26	Leaf and canopy scale drivers of genotypic variation in soybean response to elevated carbon dioxide concentration. <i>Global Change Biology</i> , 2017 , 23, 3908-3920	11.4	17
25	An improved approach for measuring the impact of multiple CO ₂ conductances on the apparent photorespiratory CO ₂ compensation point through slope-intercept regression. <i>Plant, Cell and Environment</i> , 2016 , 39, 1198-203	8.4	14
24	Uncertainty in measurements of the photorespiratory CO compensation point and its impact on models of leaf photosynthesis. <i>Photosynthesis Research</i> , 2017 , 132, 245-255	3.7	13
23	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 photosynthesis--a case study of CO ₂ enrichment and leaf aging effects in soybean. <i>Plant Science</i> , 2014 , 226, 49-60	5.3	12
22	Energy and carbon accounting to compare bioenergy crops. <i>Current Opinion in Biotechnology</i> , 2013 , 24, 369-75	11.4	12
21	Perspectives on improving light distribution and light use efficiency in crop canopies. <i>Plant Physiology</i> , 2021 , 185, 34-48	6.6	12
20	A wish list for synthetic biology in photosynthesis research. <i>Journal of Experimental Botany</i> , 2020 , 71, 2219-2225	7	11
19	The Plastid Casein Kinase 2 Phosphorylates Rubisco Activase at the Thr-78 Site but Is Not Essential for Regulation of Rubisco Activation State. <i>Frontiers in Plant Science</i> , 2016 , 7, 404	6.2	11
18	Canopy warming accelerates development in soybean and maize, offsetting the delay in soybean reproductive development by elevated CO ₂ concentrations. <i>Plant, Cell and Environment</i> , 2018 , 41, 2806-2820	8.4	10
17	High sink strength prevents photosynthetic down-regulation in cassava grown at elevated CO ₂ concentration. <i>Journal of Experimental Botany</i> , 2021 , 72, 542-560	7	10
16	Investigating the Control of Chlorophyll Degradation by Genomic Correlation Mining. <i>PLoS ONE</i> , 2016 , 11, e0162327	3.7	9
15	A role for differential Rubisco activase isoform expression in C ₄ bioenergy grasses at high temperature. <i>GCB Bioenergy</i> , 2021 , 13, 211-223	5.6	9
14	In vivo evidence for a regulatory role of phosphorylation of Rubisco activase at the Thr78 site. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 18723-18731	11.5	7
13	Chilling-Induced Limitations on Photosynthesis in Warm Climate Plants: Contrasting Mechanisms.. <i>Seibutsu Kankyo Chosetsu [Environment Control in Biology]</i> , 2002 , 40, 7-18		7

12	Colin A. Wraight, 1945-2014. <i>Photosynthesis Research</i> , 2016 , 127, 237-56	3.7	6
11	Alternative pathway to photorespiration protects growth and productivity at elevated temperatures in a model crop. <i>Plant Biotechnology Journal</i> , 2021 ,	11.6	6
10	Soybean photosynthetic and biomass responses to carbon dioxide concentrations ranging from pre-industrial to the distant future. <i>Journal of Experimental Botany</i> , 2020 , 71, 3690-3700	7	4
9	Microalgal metabolic engineering strategies for the production of fuels and chemicals.. <i>Bioresource Technology</i> , 2021 , 345, 126529	11	3
8	Glycolate production by a <i>Chlamydomonas reinhardtii</i> mutant lacking carbon-concentrating mechanism. <i>Journal of Biotechnology</i> , 2021 , 335, 39-46	3.7	3
7	Perspective: Understanding the Intersection of Climate/Environmental Change, Health, Agriculture, and Improved Nutrition - A Case Study: Type 2 Diabetes. <i>Advances in Nutrition</i> , 2019 , 10, 731-738	10	2
6	Photoautotrophic organic acid production: Glycolic acid production by microalgal cultivation. <i>Chemical Engineering Journal</i> , 2021 , 133636	14.7	2
5	L-malic acid production from xylose by engineered <i>Saccharomyces cerevisiae</i> . <i>Biotechnology Journal</i> , 2021 , e2000431	5.6	2
4	Arabidopsis plants expressing only the redox-regulated Rca-isoform have constrained photosynthesis and plant growth. <i>Plant Journal</i> , 2020 , 103, 2250-2262	6.9	1
3	A phytophotonic approach to enhanced photosynthesis. <i>Energy and Environmental Science</i> , 2020 , 13, 4794-4807	35.4	0
2	Photosynthetic Efficiency Improvement 2020 , 256-256		
1	Economical synthesis of C-labeled aminolevulinic acid for specific in situ labeling of plant tetrapyrroles. <i>Photosynthesis Research</i> , 2019 , 142, 241-247	3.7	