

N Michele Holbrook

List of Publications by Year in descending order

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129
papers

15,346
citations

18341

62
h-index

19069

119
g-index

155
all docs

155
docs citations

155
times ranked

12905
citing authors

#	ARTICLE	IF	CITATIONS
1	Increasing CO ₂ threatens human nutrition. <i>Nature</i> , 2014, 510, 139-142.	36.2	1,099
2	LEAF HYDRAULICS. <i>Annual Review of Plant Biology</i> , 2006, 57, 361-381.	19.0	835
3	The "hydrology" of leaves: co-ordination of structure and function in temperate woody species. <i>Plant, Cell and Environment</i> , 2003, 26, 1343-1356.	6.0	645
4	Stomatal Closure during Leaf Dehydration, Correlation with Other Leaf Physiological Traits. <i>Plant Physiology</i> , 2003, 132, 2166-2173.	5.1	592
5	Why Leaves Turn Red in Autumn. The Role of Anthocyanins in Senescing Leaves of Red-Osier Dogwood. <i>Plant Physiology</i> , 2001, 127, 566-574.	5.1	511
6	Hydrogel Control of Xylem Hydraulic Resistance in Plants. <i>Science</i> , 2001, 291, 1059-1062.	20.9	490
7	Stem water storage and diurnal patterns of water use in tropical forest canopy trees. <i>Plant, Cell and Environment</i> , 1998, 21, 397-406.	6.0	453
8	Relations between stomatal closure, leaf turgor and xylem vulnerability in eight tropical dry forest trees. <i>Plant, Cell and Environment</i> , 2003, 26, 443-450.	6.0	364
9	Cutting xylem under tension or supersaturated with gas can generate PLC and the appearance of rapid recovery from embolism. <i>Plant, Cell and Environment</i> , 2013, 36, 1938-1949.	6.0	356
10	Leaf hydraulic capacity in ferns, conifers and angiosperms: impacts on photosynthetic maxima. <i>New Phytologist</i> , 2005, 165, 839-846.	7.8	336
11	Embolism Repair and Xylem Tension: Do We Need a Miracle?1. <i>Plant Physiology</i> , 1999, 120, 7-10.	5.1	306
12	Spring Filling of Xylem Vessels in Wild Grapevine. <i>Plant Physiology</i> , 1987, 83, 414-417.	5.1	295
13	Confronting Maxwell's demon: biophysics of xylem embolism repair. <i>Trends in Plant Science</i> , 2009, 14, 530-534.	9.1	284
14	Iso/Anisohydry: A Plant-Environment Interaction Rather Than a Simple Hydraulic Trait. <i>Trends in Plant Science</i> , 2018, 23, 112-120.	9.1	266
15	In Vivo Observation of Cavitation and Embolism Repair Using Magnetic Resonance Imaging. <i>Plant Physiology</i> , 2001, 126, 27-31.	5.1	254
16	The hydraulic conductance of the angiosperm leaf lamina: a comparison of three measurement methods. <i>Journal of Experimental Botany</i> , 2002, 53, 2177-2184.	4.9	241
17	Stomatal protection against hydraulic failure: a comparison of coexisting ferns and angiosperms. <i>New Phytologist</i> , 2004, 162, 663-670.	7.8	216
18	The role of freezing in setting the latitudinal limits of mangrove forests. <i>New Phytologist</i> , 2007, 173, 576-583.	7.8	209

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19	Cooling of US Midwest summer temperature extremes from cropland intensification. <i>Nature Climate Change</i> , 2016, 6, 317-322.	14.3	205
20	Pigment dynamics and autumn leaf senescence in a New England deciduous forest, eastern USA. <i>Ecological Research</i> , 2003, 18, 677-694.	1.3	201
21	Diversity of hydraulic traits in nine <i>Cordia</i> species growing in tropical forests with contrasting precipitation. <i>New Phytologist</i> , 2007, 175, 686-698.	7.8	186
22	Diurnal depression of leaf hydraulic conductance in a tropical tree species. <i>Plant, Cell and Environment</i> , 2004, 27, 820-827.	6.0	180
23	Hydraulic Analysis of Water Flow through Leaves of Sugar Maple and Red Oak. <i>Plant Physiology</i> , 2004, 134, 1824-1833.	5.1	176
24	Diurnal variation in xylem hydraulic conductivity in white ash (<i>Fraxinus americana</i> L.), red maple (<i>Acer</i> Tj ETQq0 0 0 rgBT /Overlock 10 T	6.6	170
25	Stomatal Closure, Basal Leaf Embolism, and Shedding Protect the Hydraulic Integrity of Grape Stems. <i>Plant Physiology</i> , 2017, 174, 764-775.	5.1	169
26	The Physicochemical Hydrodynamics of Vascular Plants. <i>Annual Review of Fluid Mechanics</i> , 2014, 46, 615-642.	25.4	167
27	Water Stress Deforms Tracheids Peripheral to the Leaf Vein of a Tropical Conifer. <i>Plant Physiology</i> , 2005, 137, 1139-1146.	5.1	161
28	Ployploidy enhances the occupation of heterogeneous environments through hydraulic related trade-offs in <i>Atriplex canescens</i> (Chenopodiaceae). <i>New Phytologist</i> , 2013, 197, 970-978.	7.8	147
29	Hydraulic properties and freezing-induced cavitation in sympatric evergreen and deciduous oaks with contrasting habitats. <i>Plant, Cell and Environment</i> , 2001, 24, 1243-1256.	6.0	139
30	Testing the Münch hypothesis of long distance phloem transport in plants. <i>ELife</i> , 2016, 5, .	5.9	139
31	INFLUENCE OF NEIGHBORS ON TREE FORM: EFFECTS OF LATERAL SHADE AND PREVENTION OF SWAY ON THE ALLOMETRY OF LIQUIDAMBAR STYRACIFLUA (SWEET GUM). <i>American Journal of Botany</i> , 1989, 76, 1740-1749.	1.9	138
32	Combined influence of soil moisture and atmospheric evaporative demand is important for accurately predicting US maize yields. <i>Nature Food</i> , 2020, 1, 127-133.	10.0	135
33	Effects of the hydraulic coupling between xylem and phloem on diurnal phloem diameter variation. <i>Plant, Cell and Environment</i> , 2011, 34, 690-703.	6.0	133
34	The spatial pattern of air seeding thresholds in mature sugar maple trees. <i>Plant, Cell and Environment</i> , 2005, 28, 1082-1089.	6.0	128
35	Scaling phloem transport: water potential equilibrium and osmoregulatory flow. <i>Plant, Cell and Environment</i> , 2003, 26, 1561-1577.	6.0	123
36	Bordered Pit Structure and Vessel Wall Surface Properties. Implications for Embolism Repair. <i>Plant Physiology</i> , 2000, 123, 1015-1020.	5.1	122

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37	Baobab trees (<i>Adansonia</i>) in Madagascar use stored water to flush new leaves but not to support stomatal opening before the rainy season. <i>New Phytologist</i> , 2006, 169, 549-559.	7.8	122
38	A potential role for xylem-phloem interactions in the hydraulic architecture of trees: effects of phloem girdling on xylem hydraulic conductance. <i>Tree Physiology</i> , 2004, 24, 911-917.	3.2	119
39	Changes in leaf hydraulic conductance during leaf shedding in seasonally dry tropical forest. <i>New Phytologist</i> , 2003, 158, 295-303.	7.8	118
40	Hydraulic architecture of leaf venation in <i>Laurus nobilis</i> L.. <i>Plant, Cell and Environment</i> , 2002, 25, 1445-1450.	6.0	116
41	Water relations under root chilling in a sensitive and tolerant tomato species. <i>Plant, Cell and Environment</i> , 2004, 27, 971-979.	6.0	115
42	Stem Water Storage. , 1995, , 151-174.		114
43	Measurements of stem xylem hydraulic conductivity in the laboratory and field. <i>Methods in Ecology and Evolution</i> , 2012, 3, 685-694.	5.3	114
44	The Competition between Liquid and Vapor Transport in Transpiring Leaves Â Â. <i>Plant Physiology</i> , 2014, 164, 1741-1758.	5.1	111
45	Water relations of coastal and estuarine <i>Rhizophora</i> mangle: xylem pressure potential and dynamics of embolism formation and repair. <i>Oecologia</i> , 2001, 126, 182-192.	2.1	109
46	Hydraulic limitations imposed by crown placement determine final size and shape of <i>Quercus rubra</i> L. leaves. <i>Plant, Cell and Environment</i> , 2004, 27, 357-365.	6.0	108
47	Investigating xylem embolism formation, refilling and water storage in tree trunks using frequency domain reflectometry. <i>Journal of Experimental Botany</i> , 2013, 64, 2321-2332.	4.9	103
48	Water storage dynamics in the main stem of subtropical tree species differing in wood density, growth rate and life history traits. <i>Tree Physiology</i> , 2015, 35, 354-365.	3.2	101
49	Understanding the Hydraulics of Porous Pipes: Tradeoffs Between Water Uptake and Root Length Utilization. <i>Journal of Plant Growth Regulation</i> , 2002, 21, 315-323.	5.0	100
50	Water balance in the arborescent palm, <i>Sabal palmetto</i> . II. Transpiration and stem water storage. <i>Plant, Cell and Environment</i> , 1992, 15, 401-409.	6.0	96
51	From epiphyte to tree: differences in leaf structure and leaf water relations associated with the transition in growth form in eight species of hemiepiphytes. <i>Plant, Cell and Environment</i> , 1996, 19, 631-642.	6.0	92
52	Reversible Leaf Xylem Collapse: A Potential â€œCircuit Breakerâ€ against Cavitation Â. <i>Plant Physiology</i> , 2016, 172, 2261-2274.	5.1	85
53	Modeling the Hydrodynamics of Phloem Sieve Plates. <i>Frontiers in Plant Science</i> , 2012, 3, 151.	3.8	83
54	Scaling phloem transport: information transmission. <i>Plant, Cell and Environment</i> , 2004, 27, 509-519.	6.0	80

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55	Comparing optimal and empirical stomatal conductance models for application in Earth system models. <i>Global Change Biology</i> , 2018, 24, 5708-5723.	9.7	80
56	Vulnerability of Xylem Vessels to Cavitation in Sugar Maple. Scaling from Individual Vessels to Whole Branches. <i>Plant Physiology</i> , 2003, 131, 1775-1780.	5.1	79
57	Cavitation and Its Discontents: Opportunities for Resolving Current Controversies. <i>Plant Physiology</i> , 2014, 164, 1649-1660.	5.1	79
58	Influence of Neighbors on Tree Form: Effects of Lateral Shade and Prevention of Sway on the Allometry of <i>Liquidambar styraciflua</i> (Sweet Gum). <i>American Journal of Botany</i> , 1989, 76, 1740.	1.9	77
59	Optimality of the Münch mechanism for translocation of sugars in plants. <i>Journal of the Royal Society Interface</i> , 2011, 8, 1155-1165.	3.4	76
60	STRANGLER FIG ROOTING HABITS AND NUTRIENT RELATIONS IN THE LLANOS OF VENEZUELA. <i>American Journal of Botany</i> , 1989, 76, 781-788.	1.9	75
61	Water relations of baobab trees (<i>Adansonia</i> spp. L.) during the rainy season: does stem water buffer daily water deficits?. <i>Plant, Cell and Environment</i> , 2006, 29, 1021-1032.	6.0	73
62	Hydraulic properties of fern sporophytes: Consequences for ecological and evolutionary diversification. <i>American Journal of Botany</i> , 2010, 97, 2007-2019.	1.9	70
63	Impacts of elevated atmospheric CO ₂ on nutrient content of important food crops. <i>Scientific Data</i> , 2015, 2, 150036.	5.4	69
64	Optimal concentration for sugar transport in plants. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20130055.	3.4	64
65	Within-stem oxygen concentration and sap flow in four temperate tree species: does long-lived xylem parenchyma experience hypoxia?. <i>Plant, Cell and Environment</i> , 2005, 28, 192-201.	6.0	63
66	Water relations of tropical dry forest flowers: pathways for water entry and the role of extracellular polysaccharides. <i>Plant, Cell and Environment</i> , 2003, 26, 623-630.	6.0	62
67	Photosynthesis in hemiepiphytic species of <i>Clusia</i> and <i>Ficus</i> . <i>Oecologia</i> , 1987, 74, 339-346.	2.1	61
68	Maintenance of carbohydrate transport in tall trees. <i>Nature Plants</i> , 2017, 3, 965-972.	9.4	60
69	Advanced vascular function discovered in a widespread moss. <i>Nature Plants</i> , 2020, 6, 273-279.	9.4	60
70	Biomechanical studies of vines. , 1992, , 73-98.		59
71	Linking xylem diameter variations with sap flow measurements. <i>Plant and Soil</i> , 2008, 305, 77-90.	3.7	57
72	Physiology of Tropical Vines and Hemiepiphytes: Plants that Climb Up and Plants that Climb Down. , 1996, , 363-394.		56

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73	Xylem sap flow and stem hydraulics of the vesselless angiosperm <i>Drimys granadensis</i> (Winteraceae) in a Costa Rican elfin forest. <i>Plant, Cell and Environment</i> , 2000, 23, 1067-1077.	6.0	54
74	Ecology of hemiepiphytism in fig species is based on evolutionary correlation of hydraulics and carbon economy. <i>Ecology</i> , 2011, 92, 2117-2130.	3.5	54
75	Hydraulic design of pine needles: one-dimensional optimization for single-vein leaves. <i>Plant, Cell and Environment</i> , 2006, 29, 803-809.	6.0	53
76	Modeling fluid flow in <i>Medullosa</i> , an anatomically unusual Carboniferous seed plant. <i>Paleobiology</i> , 2008, 34, 472-493.	2.7	52
77	Phloem Transport Velocity Varies over Time and among Vascular Bundles during Early Cucumber Seedling Development. <i>Plant Physiology</i> , 2013, 163, 1409-1418.	5.1	50
78	Indocyanine green fluorescence angiography during low anterior resection for low rectal cancer: results of a comparative cohort study. <i>Techniques in Coloproctology</i> , 2018, 22, 535-540.	2.0	49
79	Water relations of epiphytic and terrestrially-rooted strangler figs in a Venezuelan palm savanna. <i>Oecologia</i> , 1996, 106, 424-431.	2.1	47
80	Leaf physiology does not predict leaf habit; examples from tropical dry forest. <i>Trees - Structure and Function</i> , 2005, 19, 290-295.	1.9	46
81	Why Leaves Turn Red in Autumn. The Role of Anthocyanins in Senescing Leaves of Red-Osier Dogwood. <i>Plant Physiology</i> , 2001, 127, 566-574.	5.1	46
82	Water balance in the arborescent palm, <i>Sabal palmetto</i> . I. Stem structure, tissue water release properties and leaf epidermal conductance. <i>Plant, Cell and Environment</i> , 1992, 15, 393-399.	6.0	45
83	Global Relationships between Cropland Intensification and Summer Temperature Extremes over the Last 50 Years. <i>Journal of Climate</i> , 2017, 30, 7505-7528.	4.2	45
84	Tensioning the helix: a mechanism for force generation in twining plants. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2009, 276, 2643-2650.	2.8	43
85	Reversible Deformation of Transfusion Tracheids in <i>Taxus baccata</i> Is Associated with a Reversible Decrease in Leaf Hydraulic Conductance. <i>Plant Physiology</i> , 2014, 165, 1557-1565.	5.1	40
86	Comparative Phenology of Epiphytic and Tree-Phase Strangler Figs in a Venezuelan Palm Savanna. <i>Biotropica</i> , 1995, 27, 183.	1.6	37
87	Relationship between Hexokinase and the Aquaporin PIP1 in the Regulation of Photosynthesis and Plant Growth. <i>PLoS ONE</i> , 2014, 9, e87888.	2.5	36
88	Easy Come, Easy Go: Capillary Forces Enable Rapid Refilling of Embolized Primary Xylem Vessels. <i>Plant Physiology</i> , 2015, 168, 1636-1647.	5.1	35
89	The tomato plastidic fructokinase <i>SlFRK3</i> plays a role in xylem development. <i>New Phytologist</i> , 2016, 209, 1484-1495.	7.8	35
90	Plant carbohydrate storage: intra- and inter-specific trade-offs reveal a major life history trait. <i>New Phytologist</i> , 2022, 235, 2211-2222.	7.8	35

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91	Comparing different methods for determining forest evapotranspiration and its components at multiple temporal scales. <i>Science of the Total Environment</i> , 2018, 633, 12-29.	8.2	34
92	Leaf Hydraulic Architecture and Stomatal Conductance: A Functional Perspective. <i>Plant Physiology</i> , 2017, 174, 1996-2007.	5.1	33
93	The importance of frictional interactions in maintaining the stability of the twining habit. <i>American Journal of Botany</i> , 2005, 92, 1820-1826.	1.9	31
94	Hydraulic conductivity of red oak (<i>Quercus rubra</i> L.) leaf tissue does not respond to light. <i>Plant, Cell and Environment</i> , 2011, 34, 565-579.	6.0	31
95	Leaf Carbon Export and Nonstructural Carbohydrates in Relation to Diurnal Water Dynamics in Mature Oak Trees. <i>Plant Physiology</i> , 2020, 183, 1612-1621.	5.1	31
96	The making of giant pumpkins: how selective breeding changed the phloem of <i>Cucurbita maxima</i> from source to sink. <i>Plant, Cell and Environment</i> , 2015, 38, 1543-1554.	6.0	30
97	Divergences in hydraulic architecture form an important basis for niche differentiation between diploid and polyploid <i>Betula</i> species in NE China. <i>Tree Physiology</i> , 2017, 37, 604-616.	3.2	29
98	Forced depression of leaf hydraulic conductance in situ: effects on the leaf gas exchange of forest trees. <i>Functional Ecology</i> , 2007, 21, 705-712.	3.6	28
99	A minimally disruptive method for measuring water potential in planta using hydrogel nanoreporters. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.6	27
100	Scaling of phloem structure and optimality of photoassimilate transport in conifer needles. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2015, 282, 20141863.	2.8	26
101	Coordinated responses of plant hydraulic architecture with the reduction of stomatal conductance under elevated CO ₂ concentration. <i>Tree Physiology</i> , 2018, 38, 1041-1052.	3.2	26
102	Wood day capacitance is related to water content, wood density, and anatomy across 30 temperate tree species. <i>Plant, Cell and Environment</i> , 2020, 43, 3048-3067.	6.0	26
103	Temporal and spatial patterns of twining force and lignification in stems of <i>Ipomoea purpurea</i> . <i>Planta</i> , 2001, 213, 192-198.	3.3	24
104	The Dynamics of "Dead Wood": Maintenance of Water Transport Through Plant Stems. <i>Integrative and Comparative Biology</i> , 2002, 42, 492-496.	2.0	24
105	Phenology, Lignotubers, and Water Relations of <i>Cochlospermum vitifolium</i> , a Pioneer Tropical Dry Forest Tree in Costa Rica. <i>Biotropica</i> , 2010, 42, 104-111.	1.6	21
106	Seasonal dynamics in photosynthesis of woody plants at the northern limit of Asian tropics: potential role of fog in maintaining tropical rainforests and agriculture in Southwest China. <i>Tree Physiology</i> , 2014, 34, 1069-1078.	3.2	19
107	Ontogenetic scaling of phloem sieve tube anatomy and hydraulic resistance with tree height in <i>Quercus rubra</i> . <i>American Journal of Botany</i> , 2020, 107, 852-863.	1.9	18
108	Leaf hydraulics I: Scaling transport properties from single cells to tissues. <i>Journal of Theoretical Biology</i> , 2014, 340, 251-266.	1.7	17

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109	Where does Münch flow begin? Sucrose transport in the pre-phloem path. <i>Current Opinion in Plant Biology</i> , 2018, 43, 101-107.	7.4	14
110	Editorial overview: Physiology and metabolism: Phloem: a supracellular highway for the transport of sugars, signals, and pathogens. <i>Current Opinion in Plant Biology</i> , 2018, 43, iii-vii.	7.4	14
111	Changes in ploidy affect vascular allometry and hydraulic function in <i>Mangifera indica</i> trees. <i>Plant Journal</i> , 2021, 108, 541-554.	5.9	13
112	Heterozygous carriers of succinyl-CoA:3-oxoacid CoA transferase deficiency can develop severe ketoacidosis. <i>Journal of Inherited Metabolic Disease</i> , 2017, 40, 845-852.	3.7	12
113	Ecophysiological differentiation between life stages in filmy ferns (Hymenophyllaceae). <i>Journal of Plant Research</i> , 2021, 134, 971-988.	2.4	12
114	Raman spectroscopy reveals high phloem sugar content in leaves of canopy red oak trees. <i>New Phytologist</i> , 2021, 232, 418-424.	7.8	12
115	Visualizing Embolism Propagation in Gas-Injected Leaves. <i>Plant Physiology</i> , 2019, 180, 874-881.	5.1	11
116	Leaf age and the timing of leaf abscission in two tropical dry forest trees. <i>Trees - Structure and Function</i> , 2008, 22, 393-401.	1.9	10
117	Leaf hydraulics II: Vascularized tissues. <i>Journal of Theoretical Biology</i> , 2014, 340, 267-284.	1.7	10
118	Xylem conduit deformation across vascular plants: an evolutionary spandrel or protective valve?. <i>New Phytologist</i> , 2023, 237, 1242-1255.	7.8	10
119	The stability of xylem water under tension: a long, slow spin proves illuminating. <i>Plant, Cell and Environment</i> , 2014, 37, 2652-2653.	6.0	9
120	Idioblasts and peltate hairs as distribution networks for water absorbed by xerophilous leaves. <i>Plant, Cell and Environment</i> , 2021, 44, 1346-1360.	6.0	9
121	Scaling of phloem hydraulic resistance in stems and leaves of the understory angiosperm shrub <i>Illicium parviflorum</i> . <i>American Journal of Botany</i> , 2019, 106, 244-259.	1.9	8
122	Localized measurements of water potential reveal large loss of conductance in living tissues of maize leaves. <i>Plant Physiology</i> , 2024, 194, 2288-2300.	5.1	3
123	New approaches to dissect leaf hydraulics reveal large gradients in living tissues of tomato leaves. <i>New Phytologist</i> , 2024, 242, 453-465.	7.8	3
124	Hydraulic properties of individual xylem vessels of <i>Fraxinus americana</i> . <i>Journal of Experimental Botany</i> , 2001, 52, 257-264.	4.9	2
125	United Kingdoms. <i>Plant Physiology</i> , 2001, 126, 952-955.	5.1	2
126	Sieve tube structural variation in <i>Austrobaileya scandens</i> and its significance for lianesence. <i>Plant, Cell and Environment</i> , 2022, 45, 2460-2475.	6.0	2

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127	A tale to astonish: Ant-Man at the plasmodesmal gates. <i>Journal of Plant Physiology</i> , 2021, 261, 153431.	3.8	0
128	Stereoselective Synthesis of β -Fused Bicyclic γ -Ureasultams via an Intramolecular Mannich and α -Michael Addition Cascade. <i>Chemistry - A European Journal</i> , 2024, 30, .	3.9	0
129	Elevated atmospheric CO ₂ has small, species-specific effects on pollen chemistry and plant growth across flowering plant species. <i>Scientific Reports</i> , 2024, 14, .	3.4	0