

Noel Michele Holbrook

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121
papers

11,682
citations

59
h-index

107
g-index

143
ext. papers

13,270
ext. citations

7.5
avg, IF

6.49
L-index

#	Paper	IF	Citations
121	Increasing CO2 threatens human nutrition. <i>Nature</i> , 2014 , 510, 139-42	50.4	762
120	Leaf hydraulics. <i>Annual Review of Plant Biology</i> , 2006 , 57, 361-81	30.7	655
119	The Hydrology of leaves: co-ordination of structure and function in temperate woody species. <i>Plant, Cell and Environment</i> , 2003 , 26, 1343-1356	8.4	490
118	Stomatal closure during leaf dehydration, correlation with other leaf physiological traits. <i>Plant Physiology</i> , 2003 , 132, 2166-73	6.6	468
117	Hydrogel control of xylem hydraulic resistance in plants. <i>Science</i> , 2001 , 291, 1059-62	33.3	455
116	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	6.6	412
115	Stem water storage and diurnal patterns of water use in tropical forest canopy trees. <i>Plant, Cell and Environment</i> , 1998 , 21, 397-406	8.4	384
114	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	8.4	291
113	Leaf hydraulic capacity in ferns, conifers and angiosperms: impacts on photosynthetic maxima. <i>New Phytologist</i> , 2005 , 165, 839-46	9.8	288
112	Embolism repair and xylem tension: Do We need a miracle?. <i>Plant Physiology</i> , 1999 , 120, 7-10	6.6	285
111	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, 1938-49	8.4	253
110	Confronting Maxwell's demon: biophysics of xylem embolism repair. <i>Trends in Plant Science</i> , 2009 , 14, 530-4	13.1	250
109	Spring filling of xylem vessels in wild grapevine. <i>Plant Physiology</i> , 1987 , 83, 414-7	6.6	250
108	In vivo observation of cavitation and embolism repair using magnetic resonance imaging. <i>Plant Physiology</i> , 2001 , 126, 27-31	6.6	217
107	The hydraulic conductance of the angiosperm leaf lamina: a comparison of three measurement methods. <i>Journal of Experimental Botany</i> , 2002 , 53, 2177-84	7	201
106	Stomatal protection against hydraulic failure: a comparison of coexisting ferns and angiosperms. <i>New Phytologist</i> , 2004 , 162, 663-670	9.8	179
105	The role of freezing in setting the latitudinal limits of mangrove forests. <i>New Phytologist</i> , 2007 , 173, 576-583	9.8	167

104	Hydraulic analysis of water flow through leaves of sugar maple and red oak. <i>Plant Physiology</i> , 2004 , 134, 1824-33	6.6	160
103	Diurnal depression of leaf hydraulic conductance in a tropical tree species. <i>Plant, Cell and Environment</i> , 2004 , 27, 820-827	8.4	158
102	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	9.8	155
101	Pigment dynamics and autumn leaf senescence in a New England deciduous forest, eastern USA. <i>Ecological Research</i> , 2003 , 18, 677-694	1.9	152
100	Stomatal control in tomato with ABA-deficient roots: response of grafted plants to soil drying. <i>Journal of Experimental Botany</i> , 2002 , 53, 1503-14	7	146
99	Iso/Anisohydry: A Plant-Environment Interaction Rather Than a Simple Hydraulic Trait. <i>Trends in Plant Science</i> , 2018 , 23, 112-120	13.1	142
98	Diurnal variation in xylem hydraulic conductivity in white ash (<i>Fraxinus americana</i> L.), red maple (<i>Acer rubrum</i> L.) and red spruce (<i>Picea rubens</i> Sarg.). <i>Plant, Cell and Environment</i> , 1998 , 21, 1173-1180	8.4	141
97	Cooling of US Midwest summer temperature extremes from cropland intensification. <i>Nature Climate Change</i> , 2016 , 6, 317-322	21.4	133
96	Water stress deforms tracheids peripheral to the leaf vein of a tropical conifer. <i>Plant Physiology</i> , 2005 , 137, 1139-46	6.6	131
95	The Physicochemical Hydrodynamics of Vascular Plants. <i>Annual Review of Fluid Mechanics</i> , 2014 , 46, 615-642	6.4	122
94	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	8.4	113
93	Bordered pit structure and vessel wall surface properties. Implications for embolism repair. <i>Plant Physiology</i> , 2000 , 123, 1015-20	6.6	110
92	Changes in leaf hydraulic conductance during leaf shedding in seasonally dry tropical forest. <i>New Phytologist</i> , 2003 , 158, 295-303	9.8	109
91	Effects of the hydraulic coupling between xylem and phloem on diurnal phloem diameter variation. <i>Plant, Cell and Environment</i> , 2011 , 34, 690-703	8.4	104
90	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, 549-59	9.8	103
89	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, 911-7	4.2	102
88	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	2.9	102
87	Stomatal Closure, Basal Leaf Embolism, and Shedding Protect the Hydraulic Integrity of Grape Stems. <i>Plant Physiology</i> , 2017 , 174, 764-775	6.6	100

86	The spatial pattern of air seeding thresholds in mature sugar maple trees. <i>Plant, Cell and Environment</i> , 2005 , 28, 1082-1089	8.4	99
85	Scaling phloem transport: water potential equilibrium and osmoregulatory flow. <i>Plant, Cell and Environment</i> , 2003 , 26, 1561-1577	8.4	98
84	Water relations under root chilling in a sensitive and tolerant tomato species. <i>Plant, Cell and Environment</i> , 2004 , 27, 971-979	8.4	95
83	Testing the Münch hypothesis of long distance phloem transport in plants. <i>ELife</i> , 2016 , 5,	8.9	91
82	Hydraulic architecture of leaf venation in <i>Laurus nobilis</i> L.. <i>Plant, Cell and Environment</i> , 2002 , 25, 1445-1450	8.4	90
81	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	8.4	89
80	Polyploidy 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	9.8	88
79	Measurements of stem xylem hydraulic conductivity in the laboratory and field. <i>Methods in Ecology and Evolution</i> , 2012 , 3, 685-694	7.7	84
78	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	8.4	81
77	The competition between liquid and vapor transport in transpiring leaves. <i>Plant Physiology</i> , 2014 , 164, 1741-58	6.6	77
76	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	8.4	77
75	Scaling phloem transport: information transmission. <i>Plant, Cell and Environment</i> , 2004 , 27, 509-519	8.4	75
74	INFLUENCE OF NEIGHBORS ON TREE FORM: EFFECTS OF LATERAL SHADE AND PREVENTION OF SWAY ON THE ALLOMETRY OF LIQUIDAMBAR STYRACIFLUA (SWEET GUM) 1989 , 76, 1740		75
73	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	2.7	74
72	Vulnerability of xylem vessels to cavitation in sugar maple. Scaling from individual vessels to whole branches. <i>Plant Physiology</i> , 2003 , 131, 1775-80	6.6	71
71	Investigating xylem embolism formation, refilling and water storage in tree trunks using frequency domain reflectometry. <i>Journal of Experimental Botany</i> , 2013 , 64, 2321-32	7	70
70	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, 354-65	4.2	67
69	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	4.7	67

68	Stem Water Storage 1995 , 151-174		67
67	Optimality of the Münch mechanism for translocation of sugars in plants. <i>Journal of the Royal Society Interface</i> , 2011 , 8, 1155-65	4.1	66
66	Cavitation and its discontents: opportunities for resolving current controversies. <i>Plant Physiology</i> , 2014 , 164, 1649-60	6.6	65
65	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, 1021-32	8.4	65
64	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	8.4	59
63	STRANGLER FIG ROOTING HABITS AND NUTRIENT RELATIONS IN THE LLANOS OF VENEZUELA. <i>American Journal of Botany</i> , 1989 , 76, 781-788	2.7	59
62	Modeling the hydrodynamics of Phloem sieve plates. <i>Frontiers in Plant Science</i> , 2012 , 3, 151	6.2	56
61	Hydraulic properties of fern sporophytes: Consequences for ecological and evolutionary diversification. <i>American Journal of Botany</i> , 2010 , 97, 2007-19	2.7	53
60	Reversible Leaf Xylem Collapse: A Potential "Circuit Breaker" against Cavitation. <i>Plant Physiology</i> , 2016 , 172, 2261-2274	6.6	51
59	Impacts of elevated atmospheric CO ₂ on nutrient content of important food crops. <i>Scientific Data</i> , 2015 , 2, 150036	8.2	50
58	Photosynthesis in hemiepiphytic species of <i>Clusia</i> and <i>Ficus</i> . <i>Oecologia</i> , 1987 , 74, 339-346	2.9	50
57	Optimal concentration for sugar transport in plants. <i>Journal of the Royal Society Interface</i> , 2013 , 10, 20130055	4.1	49
56	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	8.4	49
55	Linking xylem diameter variations with sap flow measurements. <i>Plant and Soil</i> , 2008 , 305, 77-90	4.2	47
54	Hydraulic design of pine needles: one-dimensional optimization for single-vein leaves. <i>Plant, Cell and Environment</i> , 2006 , 29, 803-9	8.4	47
53	Comparing optimal and empirical stomatal conductance models for application in Earth system models. <i>Global Change Biology</i> , 2018 , 24, 5708-5723	11.4	44
52	Phloem transport velocity varies over time and among vascular bundles during early cucumber seedling development. <i>Plant Physiology</i> , 2013 , 163, 1409-18	6.6	43
51	Modeling fluid flow in <i>Medullosa</i> , an anatomically unusual Carboniferous seed plant. <i>Paleobiology</i> , 2008 , 34, 472-493	2.6	43

50	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	8.4	43
49	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	14.4	42
48	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	8.4	42
47	Leaf physiology does not predict leaf habit; examples from tropical dry forest. <i>Trees - Structure and Function</i> , 2005 , 19, 290-295	2.6	40
46	Ecology of hemiepiphytism in fig species is based on evolutionary correlation of hydraulics and carbon economy. <i>Ecology</i> , 2011 , 92, 2117-30	4.6	38
45	Water relations of epiphytic and terrestrially-rooted strangler figs in a Venezuelan palm savanna. <i>Oecologia</i> , 1996 , 106, 424-431	2.9	38
44	Global Relationships between Cropland Intensification and Summer Temperature Extremes over the Last 50 Years. <i>Journal of Climate</i> , 2017 , 30, 7505-7528	4.4	35
43	Physiology of Tropical Vines and Hemiepiphytes: Plants that Climb Up and Plants that Climb Down 1996 , 363-394		34
42	Maintenance of carbohydrate transport in tall trees. <i>Nature Plants</i> , 2017 , 3, 965-972	11.5	33
41	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	6.6	33
40	Relationship between hexokinase and the aquaporin PIP1 in the regulation of photosynthesis and plant growth. <i>PLoS ONE</i> , 2014 , 9, e87888	3.7	30
39	Tensioning the helix: a mechanism for force generation in twining plants. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2009 , 276, 2643-50	4.4	28
38	Advanced vascular function discovered in a widespread moss. <i>Nature Plants</i> , 2020 , 6, 273-279	11.5	27
37	Easy Come, Easy Go: Capillary Forces Enable Rapid Refilling of Embolized Primary Xylem Vessels. <i>Plant Physiology</i> , 2015 , 168, 1636-47	6.6	26
36	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	5.6	26
35	The tomato plastidic fructokinase SlFRK3 plays a role in xylem development. <i>New Phytologist</i> , 2016 , 209, 1484-95	9.8	25
34	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, 565-79	8.4	25
33	Leaf Hydraulic Architecture and Stomatal Conductance: A Functional Perspective. <i>Plant Physiology</i> , 2017 , 174, 1996-2007	6.6	22

32	Comparative Phenology of Epiphytic and Tree-Phase Strangler Figs in a Venezuelan Palm Savanna. <i>Biotropica</i> , 1995 , 27, 183	2.3	21
31	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, 1543-54	8.4	20
30	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	4.4	20
29	The importance of frictional interactions in maintaining the stability of the twining habit. <i>American Journal of Botany</i> , 2005 , 92, 1820-6	2.7	20
28	Temporal and spatial patterns of twining force and lignification in stems of <i>Ipomoea purpurea</i> . <i>Planta</i> , 2001 , 213, 192-8	4.7	20
27	The dynamics of "dead wood": maintenance of water transport through plant stems. <i>Integrative and Comparative Biology</i> , 2002 , 42, 492-6	2.8	19
26	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	4.2	17
25	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	10.2	17
24	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	2.3	17
23	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, 1069-78	4.2	15
22	Biomechanical studies of vines 1992 , 73-98		15
21	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	4.2	14
20	Leaf hydraulics I: scaling transport properties from single cells to tissues. <i>Journal of Theoretical Biology</i> , 2014 , 340, 251-66	2.3	13
19	Leaf Carbon Export and Nonstructural Carbohydrates in Relation to Diurnal Water Dynamics in Mature Oak Trees. <i>Plant Physiology</i> , 2020 , 183, 1612-1621	6.6	12
18	Where does M _B ch flow begin? Sucrose transport in the pre-phloem path. <i>Current Opinion in Plant Biology</i> , 2018 , 43, 101-107	9.9	12
17	Leaf hydraulics II: vascularized tissues. <i>Journal of Theoretical Biology</i> , 2014 , 340, 267-84	2.3	10
16	The stability of xylem water under tension: a long, slow spin proves illuminating. <i>Plant, Cell and Environment</i> , 2014 , 37, 2652-3	8.4	9
15	Leaf age and the timing of leaf abscission in two tropical dry forest trees. <i>Trees - Structure and Function</i> , 2008 , 22, 393-401	2.6	7

14	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	8.4	7
13	Visualizing Embolism Propagation in Gas-Injected Leaves. <i>Plant Physiology</i> , 2019 , 180, 874-881	6.6	6
12	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	2.7	5
11	The role of leaf hydraulic conductance dynamics on the timing of leaf senescence. <i>Functional Plant Biology</i> , 2013 , 41, 37-47	2.7	5
10	Impact of hemlock woolly adelgid (<i>Adelges tsugae</i>) infestation on xylem structure and function and leaf physiology in eastern hemlock (<i>Tsuga canadensis</i>). <i>Functional Plant Biology</i> , 2018 , 45, 501-508	2.7	5
9	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	2.7	4
8	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,	11.5	4
7	Ecophysiological differentiation between life stages in filmy ferns (Hymenophyllaceae). <i>Journal of Plant Research</i> , 2021 , 134, 971-988	2.6	4
6	Raman spectroscopy reveals high phloem sugar content in leaves of canopy red oak trees. <i>New Phytologist</i> , 2021 , 232, 418-424	9.8	4
5	Hydraulic properties of individual xylem vessels of <i>Fraxinus americana</i> . <i>Journal of Experimental Botany</i> , 2001 , 52, 257-264	7	2
4	Idioblasts and peltate hairs as distribution networks for water absorbed by xerophilous leaves. <i>Plant, Cell and Environment</i> , 2021 , 44, 1346-1360	8.4	2
3	Wood capacitance is related to water content, wood density, and anatomy across 30 temperate tree species		1
2	Changes in ploidy affect vascular allometry and hydraulic function in <i>Mangifera indica</i> trees. <i>Plant Journal</i> , 2021 , 108, 541-554	6.9	1
1	A tale to astonish: Ant-Man at the plasmodesmal gates. <i>Journal of Plant Physiology</i> , 2021 , 261, 153431	3.6	