

Jan Traas

List of Publications by Year in descending order

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99
papers

11,777
citations

41258

49
h-index

39575

94
g-index

107
all docs

107
docs citations

107
times ranked

8160
citing authors

#	ARTICLE	IF	CITATIONS
1	Regulation of phyllotaxis by polar auxin transport. <i>Nature</i> , 2003, 426, 255-260.	13.7	1,361
2	Developmental Patterning by Mechanical Signals in <i>Arabidopsis</i> . <i>Science</i> , 2008, 322, 1650-1655.	6.0	795
3	A novel sensor to map auxin response and distribution at high spatio-temporal resolution. <i>Nature</i> , 2012, 482, 103-106.	13.7	664
4	The auxin signalling network translates dynamic input into robust patterning at the shoot apex. <i>Molecular Systems Biology</i> , 2011, 7, 508.	3.2	520
5	MicroRNA regulation of the CUC genes is required for boundary size control in <i>Arabidopsis</i> meristems. <i>Development (Cambridge)</i> , 2004, 131, 4311-4322.	1.2	481
6	Mechanical Stress Acts via Katanin to Amplify Differences in Growth Rate between Adjacent Cells in <i>Arabidopsis</i> . <i>Cell</i> , 2012, 149, 439-451.	13.5	418
7	Alignment between PIN1 Polarity and Microtubule Orientation in the Shoot Apical Meristem Reveals a Tight Coupling between Morphogenesis and Auxin Transport. <i>PLoS Biology</i> , 2010, 8, e1000516.	2.6	392
8	Computer simulations reveal properties of the cell-cell signaling network at the shoot apex in <i>Arabidopsis</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 1627-1632.	3.3	330
9	Normal differentiation patterns in plants lacking microtubular preprophase bands. <i>Nature</i> , 1995, 375, 676-677.	13.7	299
10	Imaging plant growth in 4D: robust tissue reconstruction and lineaging at cell resolution. <i>Nature Methods</i> , 2010, 7, 547-553.	9.0	291
11	Cytokinin signalling inhibitory fields provide robustness to phyllotaxis. <i>Nature</i> , 2014, 505, 417-421.	13.7	236
12	PIN-FORMED1 and PINOID regulate boundary formation and cotyledon development in <i>Arabidopsis</i> embryogenesis. <i>Development (Cambridge)</i> , 2004, 131, 5021-5030.	1.2	231
13	Cellular Parameters of the Shoot Apical Meristem in <i>Arabidopsis</i> . <i>Plant Cell</i> , 1998, 10, 1375-1389.	3.1	230
14	Cell numbers and leaf development in <i>Arabidopsis</i> : a functional analysis of the STRUWWELPETER gene. <i>EMBO Journal</i> , 2002, 21, 6036-6049.	3.5	222
15	In Vivo Analysis of Cell Division, Cell Growth, and Differentiation at the Shoot Apical Meristem in <i>Arabidopsis</i> . <i>Plant Cell</i> , 2004, 16, 74-87.	3.1	199
16	Roles of <i>PIN-FORMED1</i> and <i>MONOPTEROS</i> in pattern formation of the apical region of the <i>Arabidopsis</i> embryo. <i>Development (Cambridge)</i> , 2002, 129, 3965-3974.	1.2	191
17	Endoreduplication and development: rule without dividing?. <i>Current Opinion in Plant Biology</i> , 1998, 1, 498-503.	3.5	186
18	<i>In vivo</i> analysis of local wall stiffness at the shoot apical meristem in <i>Arabidopsis</i> using atomic force microscopy. <i>Plant Journal</i> , 2011, 67, 1116-1123.	2.8	186

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19	KNAT6: An Arabidopsis Homeobox Gene Involved in Meristem Activity and Organ Separation. <i>Plant Cell</i> , 2006, 18, 1900-1907.	3.1	183
20	Flux-Based Transport Enhancement as a Plausible Unifying Mechanism for Auxin Transport in Meristem Development. <i>PLoS Computational Biology</i> , 2008, 4, e1000207.	1.5	182
21	The mechanics behind plant development. <i>New Phytologist</i> , 2010, 185, 369-385.	3.5	169
22	COP1 mediates the coordination of root and shoot growth by light through modulation of PIN1- and PIN2-dependent auxin transport in <i>Arabidopsis</i> . <i>Development (Cambridge)</i> , 2012, 139, 3402-3412.	1.2	167
23	An Auxin-Mediated Shift toward Growth Isotropy Promotes Organ Formation at the Shoot Meristem in <i>Arabidopsis</i> . <i>Current Biology</i> , 2014, 24, 2335-2342.	1.8	161
24	The elongata mutants identify a functional Elongator complex in plants with a role in cell proliferation during organ growth. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 7754-7759.	3.3	154
25	Phytochrome controls the number of endoreduplication cycles in the <i>Arabidopsis thaliana</i> hypocotyl. <i>Plant Journal</i> , 1998, 13, 221-230.	2.8	153
26	The plasma membrane recycling pathway and cell polarity in plants: studies on PIN proteins. <i>Journal of Cell Science</i> , 2006, 119, 1255-1265.	1.2	139
27	Mechanical stress contributes to the expression of the STM homeobox gene in <i>Arabidopsis</i> shoot meristems. <i>eLife</i> , 2015, 4, e07811.	2.8	137
28	ZmPIN1a and ZmPIN1b Encode Two Novel Putative Candidates for Polar Auxin Transport and Plant Architecture Determination of Maize. <i>Plant Physiology</i> , 2006, 142, 254-264.	2.3	134
29	Cell-size dependent progression of the cell cycle creates homeostasis and flexibility of plant cell size. <i>Nature Communications</i> , 2017, 8, 15060.	5.8	133
30	Auxin at the Shoot Apical Meristem. <i>Cold Spring Harbor Perspectives in Biology</i> , 2010, 2, a001487-a001487.	2.3	131
31	<i>KNAT2</i> . <i>Plant Cell</i> , 2001, 13, 1719-1734.	3.1	124
32	The ethanol switch: a tool for tissue-specific gene induction during plant development. <i>Plant Journal</i> , 2003, 36, 918-930.	2.8	115
33	Plants expressing a miR164-resistant CLUC2 gene reveal the importance of post-meristematic maintenance of phyllotaxy in <i>Arabidopsis</i> . <i>Development (Cambridge)</i> , 2007, 134, 1045-1050.	1.2	113
34	The heterodimeric transcription factor complex ERF115/PAT1 grants regeneration competence. <i>Nature Plants</i> , 2016, 2, 16165.	4.7	111
35	A Computational Framework for 3D Mechanical Modeling of Plant Morphogenesis with Cellular Resolution. <i>PLoS Computational Biology</i> , 2015, 11, e1003950.	1.5	110
36	Systems Analysis of Shoot Apical Meristem Growth and Development: Integrating Hormonal and Mechanical Signaling. <i>Plant Cell</i> , 2012, 24, 3907-3919.	3.1	109

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37	Turning a plant tissue into a living cell froth through isotropic growth. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 8453-8458.	3.3	107
38	The KNAT2 Homeodomain Protein Interacts with Ethylene and Cytokinin Signaling. Plant Physiology, 2002, 130, 657-665.	2.3	90
39	Roles of PIN-FORMED1 and MONOPTEROS in pattern formation of the apical region of the Arabidopsis embryo. Development (Cambridge), 2002, 129, 3965-74.	1.2	87
40	Floral stem cell termination involves the direct regulation of <i>AGAMOUS</i> by <i>PERIANTHIA</i> . Development (Cambridge), 2009, 136, 1605-1611.	1.2	84
41	Separable roles of UFO during floral development revealed by conditional restoration of gene function. Development (Cambridge), 2003, 130, 785-796.	1.2	76
42	Cellular Heterogeneity in Pressure and Growth Emerges from Tissue Topology and Geometry. Current Biology, 2020, 30, 1504-1516.e8.	1.8	73
43	How Mechanical Forces Shape Plant Organs. Current Biology, 2021, 31, R143-R159.	1.8	73
44	Gibberellin and ethylene control endoreduplication levels in the Arabidopsis thaliana hypocotyl. Planta, 1999, 209, 513-516.	1.6	70
45	A chromosomal paracentric inversion associated with T-DNA integration in Arabidopsis. Plant Journal, 1999, 18, 131-139.	2.8	69
46	Microtubule-Mediated Wall Anisotropy Contributes to Leaf Blade Flattening. Current Biology, 2020, 30, 3972-3985.e6.	1.8	69
47	A protocol to analyse cellular dynamics during plant development. Plant Journal, 2005, 44, 1045-1053.	2.8	68
48	Plant CDC2 is not only targeted to the pre-prophase band, but also co-localizes with the spindle, phragmoplast, and chromosomes. FEBS Letters, 1997, 418, 229-234.	1.3	64
49	Cell Differentiation and Organ Initiation at the Shoot Apical Meristem. Plant Molecular Biology, 2006, 60, 811-826.	2.0	63
50	A Data-Driven Integrative Model of Sepal Primordium Polarity in <i>Arabidopsis</i> . Plant Cell, 2011, 23, 4318-4333.	3.1	54
51	MGOUN3, an Arabidopsis gene with Tetratricopeptide-Repeat-related motifs, regulates meristem cellular organization. Journal of Experimental Botany, 2004, 55, 673-684.	2.4	52
52	A correlative microscopy approach relates microtubule behaviour, local organ geometry, and cell growth at the Arabidopsis shoot apical meristem. Journal of Experimental Botany, 2013, 64, 5753-5767.	2.4	45
53	Physical Models of Plant Development. Annual Review of Cell and Developmental Biology, 2014, 30, 59-78.	4.0	43
54	Transcriptional induction of cell wall remodelling genes is coupled to microtubule-driven growth isotropy at the shoot apex in Arabidopsis. Development (Cambridge), 2018, 145, .	1.2	42

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55	The shoot apical meristem: the dynamics of a stable structure. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2002, 357, 737-747.	1.8	41
56	Regulation of shape and patterning in plant development. <i>Current Opinion in Genetics and Development</i> , 2010, 20, 454-459.	1.5	41
57	Force-Driven Polymerization and Turgor-Induced Wall Expansion. <i>Trends in Plant Science</i> , 2016, 21, 398-409.	4.3	39
58	Phyllotaxis. <i>Development (Cambridge)</i> , 2013, 140, 249-253.	1.2	38
59	A multiscale analysis of early flower development in <i>Arabidopsis</i> provides an integrated view of molecular regulation and growth control. <i>Developmental Cell</i> , 2021, 56, 540-556.e8.	3.1	37
60	Developmental control of cell division patterns in the shoot apex. <i>Plant Molecular Biology</i> , 2000, 43, 569-581.	2.0	34
61	Cellular basis of shoot apical meristem development. <i>International Review of Cytology</i> , 2001, 208, 161-206.	6.2	33
62	Integrating physical stress, growth, and development. <i>Current Opinion in Plant Biology</i> , 2010, 13, 46-52.	3.5	33
63	Molecular aspects of microtubule dynamics in plants. <i>Current Opinion in Plant Biology</i> , 2001, 4, 513-519.	3.5	31
64	A 3D gene expression atlas of the floral meristem based on spatial reconstruction of single nucleus RNA sequencing data. <i>Nature Communications</i> , 2022, 13, .	5.8	31
65	When biochemistry meets mechanics: a systems view of growth control in plants. <i>Current Opinion in Plant Biology</i> , 2015, 28, 137-143.	3.5	28
66	Cyclin-dependent kinase activity retains the shoot apical meristem cells in an undifferentiated state. <i>Plant Journal</i> , 2010, 64, no-no.	2.8	26
67	Xyloglucans and Microtubules Synergistically Maintain Meristem Geometry and Phyllotaxis. <i>Plant Physiology</i> , 2019, 181, 1191-1206.	2.3	26
68	A mutation affecting etiolation and cell elongation in <i>Nicotiana plumbaginifolia</i> causes abnormal division plane alignment and pattern formation in the root meristem+. <i>Plant Journal</i> , 1995, 7, 785-796.	2.8	25
69	Evidence for the Regulation of Gynoecium Morphogenesis by <i>ETTIN</i> via Cell Wall Dynamics. <i>Plant Physiology</i> , 2018, 178, 1222-1232.	2.3	25
70	Organogenesis at the Shoot Apical Meristem. <i>Plants</i> , 2019, 8, 6.	1.6	23
71	Cells and domains: Two views of the shoot meristem in <i>Arabidopsis</i> . <i>Plant Physiology and Biochemistry</i> , 1998, 36, 33-45.	2.8	21
72	Oscillating Roots. <i>Science</i> , 2010, 329, 1290-1291.	6.0	19

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73	Cell proliferation patterns at the shoot apical meristem. <i>Current Opinion in Plant Biology</i> , 2005, 8, 587-592.	3.5	18
74	Systems Biology of Organ Initiation at the Shoot Apex. <i>Plant Physiology</i> , 2010, 152, 420-427.	2.3	18
75	Mechanical signaling in plant morphogenesis. <i>Current Opinion in Genetics and Development</i> , 2018, 51, 26-30.	1.5	18
76	Regulation of plant cell wall stiffness by mechanical stress: a mesoscale physical model. <i>Journal of Mathematical Biology</i> , 2019, 78, 625-653.	0.8	17
77	Cellular Parameters of the Shoot Apical Meristem in Arabidopsis. <i>Plant Cell</i> , 1998, 10, 1375.	3.1	15
78	Is cell polarity under mechanical control in plants?. <i>Plant Signaling and Behavior</i> , 2011, 6, 137-139.	1.2	15
79	Expression patterns of TEL genes in Poaceae suggest a conserved association with cell differentiation. <i>Journal of Experimental Botany</i> , 2005, 56, 1605-1614.	2.4	14
80	The membrane-associated cytoskeleton in cultured lens cells. Electron microscopical visualization in cleaved whole-mount preparations and platinum replicas. <i>Experimental Eye Research</i> , 1986, 43, 519-528.	1.2	13
81	The Flux-Based PIN Allocation Mechanism Can Generate Either Canalyzed or Diffuse Distribution Patterns Depending on Geometry and Boundary Conditions. <i>PLoS ONE</i> , 2013, 8, e54802.	1.1	13
82	Reproductive Meristem22 is a unique marker for the early stages of stamen development. <i>International Journal of Developmental Biology</i> , 2011, 55, 657-664.	0.3	12
83	Flower development: from morphodynamics to morphomechanics. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20150545.	1.8	12
84	Benchmarking of deep learning algorithms for 3D instance segmentation of confocal image datasets. <i>PLoS Computational Biology</i> , 2022, 18, e1009879.	1.5	10
85	Spatio-temporal registration of 3D microscopy image sequences of arabidopsis floral meristems. , 2016, , .		8
86	Stable establishment of organ polarity occurs several plastochrons before primordium outgrowth in <i>Arabidopsis</i> . <i>Development (Cambridge)</i> , 2021, 148, .	1.2	8
87	From genes to shape: Understanding the control of morphogenesis at the shoot meristem in higher plants using systems biology. <i>Comptes Rendus - Biologies</i> , 2009, 332, 974-985.	0.1	7
88	Molecular Networks Regulating Meristem Homeostasis. <i>Molecular Plant</i> , 2018, 11, 883-885.	3.9	6
89	Simulating Turgor-Induced Stress Patterns in Multilayered Plant Tissues. <i>Bulletin of Mathematical Biology</i> , 2019, 81, 3362-3384.	0.9	5
90	New insights in shoot apical meristem morphogenesis: Isotropy comes into play. <i>Plant Signaling and Behavior</i> , 2015, 10, e1000150.	1.2	4

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91	Plant Development: From Dynamics to Mechanics. <i>Current Biology</i> , 2017, 27, R313-R315.	1.8	4
92	Visualization of cortical microtubule networks in plant cells by live imaging and immunostaining. <i>STAR Protocols</i> , 2021, 2, 100301.	0.5	4
93	Plant Development: From Biochemistry to Biophysics and Back. <i>Current Biology</i> , 2014, 24, R237-R238.	1.8	3
94	Developmental control of cell division patterns in the shoot apex. , 2000, , 25-37.		2
95	The Mechanical Feedback Theory of Leaf Lamina Formation. <i>Trends in Plant Science</i> , 2021, 26, 107-110.	4.3	2
96	From Auxin Transport to Patterning. <i>Signaling and Communication in Plants</i> , 2013, , 259-279.	0.5	1
97	Developmental and Cell Cycle Regulation of Alfalfa nucMs1, a Plant Homolog of the Yeast Nsr1 and Mammalian Nucleolin. <i>Plant Cell</i> , 1996, 8, 417.	3.1	0
98	KNAT2: Evidence for a Link between Knotted-Like Genes and Carpel Development. <i>Plant Cell</i> , 2001, 13, 1719.	3.1	0
99	Yves Couder: Putting mechanics back into the shoot apical meristem. <i>Comptes Rendus - Mecanique</i> , 2020, 348, 679-684.	0.3	0