Jan Traas

List of Publications by Year
in descending order

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	Benchmarking of deep learning algorithms for 3D instance segmentation of confocal image datasets. PLoS Computational Biology, 2022, 18, e1009879.	1.5	10
2	A 3D gene expression atlas of the floral meristem based on spatial reconstruction of single nucleus RNA sequencing data. Nature Communications, 2022, 13, .	5.8	31
3	The Mechanical Feedback Theory of Leaf Lamina Formation. Trends in Plant Science, 2021, 26, 107-110.	4.3	2
4	How Mechanical Forces Shape Plant Organs. Current Biology, 2021, 31, R143-R159.	1.8	73
5	A multiscale analysis of early flower development in Arabidopsis provides an integrated view of molecular regulation and growth control. Developmental Cell, 2021, 56, 540-556.e8.	3.1	37
6	Visualization of cortical microtubule networks in plant cells by live imaging and immunostaining. STAR Protocols, 2021, 2, 100301.	0.5	4
7	Stable establishment of organ polarity occurs several plastochrons before primordium outgrowth in <i>Arabidopsis</i>. Development (Cambridge), 2021, 148, .	1.2	8
8	Microtubule-Mediated Wall Anisotropy Contributes to Leaf Blade Flattening. Current Biology, 2020, 30, 3972-3985.e6.	1.8	69
9	Cellular Heterogeneity in Pressure and Growth Emerges from Tissue Topology and Geometry. Current Biology, 2020, 30, 1504-1516.e8.	1.8	73
10	Yves Couder: Putting mechanics back into the shoot apical meristem. Comptes Rendus - Mecanique, 2020, 348, 679-684.	0.3	0
11	Simulating Turgor-Induced Stress Patterns in Multilayered Plant Tissues. Bulletin of Mathematical Biology, 2019, 81, 3362-3384.	0.9	5
12	Xyloglucans and Microtubules Synergistically Maintain Meristem Geometry and Phyllotaxis. Plant Physiology, 2019, 181, 1191-1206.	2.3	26
13	Regulation of plant cell wall stiffness by mechanical stress: a mesoscale physical model. Journal of Mathematical Biology, 2019, 78, 625-653.	0.8	17
14	Organogenesis at the Shoot Apical Meristem. Plants, 2019, 8, 6.	1.6	23
15	Mechanical signaling in plant morphogenesis. Current Opinion in Genetics and Development, 2018, 51, 26-30.	1.5	18
16	Evidence for the Regulation of Gynoecium Morphogenesis by <i>ETTIN</i> via Cell Wall Dynamics. Plant Physiology, 2018, 178, 1222-1232.	2.3	25
17	Molecular Networks Regulating Meristem Homeostasis. Molecular Plant, 2018, 11, 883-885.	3.9	6
18	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

#	Article	IF	Citations
19	Plant Development: From Dynamics to Mechanics. Current Biology, 2017, 27, R313-R315.	1.8	4
20	Flower development: from morphodynamics to morphomechanics. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20150545.	1.8	12
21	Cell-size dependent progression of the cell cycle creates homeostasis and flexibility of plant cell size. Nature Communications, 2017, 8, 15060.	5.8	133
22	Spatio-temporal registration of 3D microscopy image sequences of arabidopsis floral meristems. , 2016, , .		8
23	The heterodimeric transcription factor complex ERF115â€“PAT1 grants regeneration competence. Nature Plants, 2016, 2, 16165.	4.7	111
24	Force-Driven Polymerization and Turgor-Induced Wall Expansion. Trends in Plant Science, 2016, 21, 398-409.	4.3	39
25	A Computational Framework for 3D Mechanical Modeling of Plant Morphogenesis with Cellular Resolution. PLoS Computational Biology, 2015, 11, e1003950.	1.5	110
26	New insights in shoot apical meristem morphogenesis: Isotropy comes into play. Plant Signaling and Behavior, 2015, 10, e1000150.	1.2	4
27	When biochemistry meets mechanics: a systems view of growth control in plants. Current Opinion in Plant Biology, 2015, 28, 137-143.	3.5	28
28	Mechanical stress contributes to the expression of the STM homeobox gene in Arabidopsis shoot meristems. ELife, 2015, 4, e07811.	2.8	137
29	Cytokinin signalling inhibitory fields provide robustness to phyllotaxis. Nature, 2014, 505, 417-421.	13.7	236
30	An Auxin-Mediated Shift toward Growth Isotropy Promotes Organ Formation at the Shoot Meristem in Arabidopsis. Current Biology, 2014, 24, 2335-2342.	1.8	161
31	Physical Models of Plant Development. Annual Review of Cell and Developmental Biology, 2014, 30, 59-78.	4.0	43
32	Plant Development: From Biochemistry to Biophysics and Back. Current Biology, 2014, 24, R237-R238.	1.8	3
33	Phyllotaxis. Development (Cambridge), 2013, 140, 249-253.	1.2	38
34	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
35	The Flux-Based PIN Allocation Mechanism Can Generate Either Canalyzed or Diffuse Distribution Patterns Depending on Geometry and Boundary Conditions. PLoS ONE, 2013, 8, e54802.	1.1	13
36	From Auxin Transport to Patterning. Signaling and Communication in Plants, 2013, , 259-279.	0.5	1

#	Article	IF	Citations
37	Systems Analysis of Shoot Apical Meristem Growth and Development: Integrating Hormonal and Mechanical Signaling. Plant Cell, 2012, 24, 3907-3919.	3.1	109
38	COP1 mediates the coordination of root and shoot growth by light through modulation of PIN1- and PIN2-dependent auxin transport in <i>Arabidopsis</i>. Development (Cambridge), 2012, 139, 3402-3412.	1.2	167
39	Mechanical Stress Acts via Katanin to Amplify Differences in Growth Rate between Adjacent Cells in Arabidopsis. Cell, 2012, 149, 439-451.	13.5	418
40	A novel sensor to map auxin response and distribution at high spatio-temporal resolution. Nature, 2012, 482, 103-106.	13.7	664
41	The auxin signalling network translates dynamic input into robust patterning at the shoot apex. Molecular Systems Biology, 2011, 7, 508.	3.2	520
42	A Data-Driven Integrative Model of Sepal Primordium Polarity in <i>Arabidopsis</i> Â Â. Plant Cell, 2011, 23, 4318-4333.	3.1	54
43	<i>Inâ€ƒvivo</i> analysis of local wall stiffness at the shoot apical meristem in Arabidopsis using atomic force microscopy. Plant Journal, 2011, 67, 1116-1123.	2.8	186
44	Reproductive Meristem22 is a unique marker for the early stages of stamen development. International Journal of Developmental Biology, 2011, 55, 657-664.	0.3	12
45	Is cell polarity under mechanical control in plants?. Plant Signaling and Behavior, 2011, 6, 137-139.	1.2	15
46	Alignment between PIN1 Polarity and Microtubule Orientation in the Shoot Apical Meristem Reveals a Tight Coupling between Morphogenesis and Auxin Transport. PLoS Biology, 2010, 8, e1000516.	2.6	392
47	Integrating physical stress, growth, and development. Current Opinion in Plant Biology, 2010, 13, 46-52.	3.5	33
48	The mechanics behind plant development. New Phytologist, 2010, 185, 369-385.	3.5	169
49	Cyclin-dependent kinase activity retains the shoot apical meristem cells in an undifferentiated state. Plant Journal, 2010, 64, no-no.	2.8	26
50	Imaging plant growth in 4D: robust tissue reconstruction and lineaging at cell resolution. Nature Methods, 2010, 7, 547-553.	9.0	291
51	Auxin at the Shoot Apical Meristem. Cold Spring Harbor Perspectives in Biology, 2010, 2, a001487-a001487.	2.3	131
52	Oscillating Roots. Science, 2010, 329, 1290-1291.	6.0	19
53	Systems Biology of Organ Initiation at the Shoot Apex. Plant Physiology, 2010, 152, 420-427.	2.3	18
54	Regulation of shape and patterning in plant development. Current Opinion in Genetics and Development, 2010, 20, 454-459.	1.5	41

#	Article	IF	Citations
55	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
56	Floral stem cell termination involves the direct regulation of<i>AGAMOUS</i>by PERIANTHIA. Development (Cambridge), 2009, 136, 1605-1611.	1.2	84
57	From genes to shape: Understanding the control of morphogenesis at the shoot meristem in higher plants using systems biology. Comptes Rendus - Biologies, 2009, 332, 974-985.	0.1	7
58	Developmental Patterning by Mechanical Signals in <i>Arabidopsis</i>. Science, 2008, 322, 1650-1655.	6.0	795
59	Flux-Based Transport Enhancement as a Plausible Unifying Mechanism for Auxin Transport in Meristem Development. PLoS Computational Biology, 2008, 4, e1000207.	1.5	182
60	Plants expressing a miR164-resistant CUC2 gene reveal the importance of post-meristematic maintenance of phyllotaxy in Arabidopsis. Development (Cambridge), 2007, 134, 1045-1050.	1.2	113
61	KNAT6: An Arabidopsis Homeobox Gene Involved in Meristem Activity and Organ Separation. Plant Cell, 2006, 18, 1900-1907.	3.1	183
62	Cell Differentiation and Organ Initiation at the Shoot Apical Meristem. Plant Molecular Biology, 2006, 60, 811-826.	2.0	63
63	Computer simulations reveal properties of the cell-cell signaling network at the shoot apex in Arabidopsis. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 1627-1632.	3.3	330
64	ZmPIN1a and ZmPIN1b Encode Two Novel Putative Candidates for Polar Auxin Transport and Plant Architecture Determination of Maize. Plant Physiology, 2006, 142, 254-264.	2.3	134
65	The plasma membrane recycling pathway and cell polarity in plants: studies on PIN proteins. Journal of Cell Science, 2006, 119, 1255-1265.	1.2	139
66	A protocol to analyse cellular dynamics during plant development. Plant Journal, 2005, 44, 1045-1053.	2.8	68
67	Cell proliferation patterns at the shoot apical meristem. Current Opinion in Plant Biology, 2005, 8, 587-592.	3.5	18
68	Expression patterns of TEL genes in Poaceae suggest a conserved association with cell differentiation. Journal of Experimental Botany, 2005, 56, 1605-1614.	2.4	14
69	The elongata mutants identify a functional Elongator complex in plants with a role in cell proliferation during organ growth. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 7754-7759.	3.3	154
70	In Vivo Analysis of Cell Division, Cell Growth, and Differentiation at the Shoot Apical Meristem in Arabidopsis. Plant Cell, 2004, 16, 74-87.	3.1	199
71	PIN-FORMED1 and PINOID regulate boundary formation and cotyledon development in Arabidopsis embryogenesis. Development (Cambridge), 2004, 131, 5021-5030.	1.2	231
72	MGOUN3, an Arabidopsis gene with TetratricoPeptide-Repeat-related motifs, regulates meristem cellular organization. Journal of Experimental Botany, 2004, 55, 673-684.	2.4	52

#	Article	IF	Citations
73	MicroRNA regulation of the CUC genes is required for boundary size control in Arabidopsis meristems. Development (Cambridge), 2004, 131, 4311-4322.	1.2	481
74	The ethanol switch: a tool for tissue-specific gene induction during plant development. Plant Journal, 2003, 36, 918-930.	2.8	115
75	Regulation of phyllotaxis by polar auxin transport. Nature, 2003, 426, 255-260.	13.7	1,361
76	Separable roles ofUFOduring floral development revealed by conditional restoration of gene function. Development (Cambridge), 2003, 130, 785-796.	1.2	76
77	The KNAT2 Homeodomain Protein Interacts with Ethylene and Cytokinin Signaling. Plant Physiology, 2002, 130, 657-665.	2.3	90
78	The shoot apical meristem: the dynamics of a stable structure. Philosophical Transactions of the Royal Society B: Biological Sciences, 2002, 357, 737-747.	1.8	41
79	Cell numbers and leaf development in Arabidopsis: a functional analysis of the STRUWWELPETER gene. EMBO Journal, 2002, 21, 6036-6049.	3.5	222
80	Roles of<i>PIN-FORMED1</i>and<i>MONOPTEROS</i>in pattern formation of the apical region of the<i>Arabidopsis</i>embryo. Development (Cambridge), 2002, 129, 3965-3974.	1.2	191
81	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
82	Molecular aspects of microtubule dynamics in plants. Current Opinion in Plant Biology, 2001, 4, 513-519.	3.5	31
83	KNAT2: Evidence for a Link between Knotted-Like Genes and Carpel Development. Plant Cell, 2001, 13, 1719.	3.1	0
84	Cellular basis of shoot apical meristem development. International Review of Cytology, 2001, 208, 161-206.	6.2	33
85	<i>KNAT2</i>. Plant Cell, 2001, 13, 1719-1734.	3.1	124
86	Developmental control of cell division patterns in the shoot apex. Plant Molecular Biology, 2000, 43, 569-581.	2.0	34
87	Developmental control of cell division patterns in the shoot apex. , 2000, , 25-37.		2
88	A chromosomal paracentric inversion associated with T-DNA integration in Arabidopsis. Plant Journal, 1999, 18, 131-139.	2.8	69
89	Gibberellin and ethylene control endoreduplication levels in the Arabidopsis thaliana hypocotyl. Planta, 1999, 209, 513-516.	1.6	70
90	Endoreduplication and development: rule without dividing?. Current Opinion in Plant Biology, 1998, 1, 498-503.	3.5	186

#	Article	IF	Citations
91	Cells and domains: Two views of the shoot meristem in Arabidopsis. Plant Physiology and Biochemistry, 1998, 36, 33-45.	2.8	21
92	Phytochrome controls the number of endoreduplication cycles in theArabidopsis thalianahypocotyl. Plant Journal, 1998, 13, 221-230.	2.8	153
93	Cellular Parameters of the Shoot Apical Meristem in Arabidopsis. Plant Cell, 1998, 10, 1375-1389.	3.1	230
94	Cellular Parameters of the Shoot Apical Meristem in Arabidopsis. Plant Cell, 1998, 10, 1375.	3.1	15
95	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
96	Developmental and Cell Cycle Regulation of Alfalfa nucMs1, a Plant Homolog of the Yeast Nsr1 and Mammalian Nucleolin. Plant Cell, 1996, 8, 417.	3.1	0
97	A mutation affecting etiolation and cell elongation in Nicotiana plumbaginifolia causes abnormal division plane alignment and pattern formation in the root meristem+. Plant Journal, 1995, 7, 785-796.	2.8	25
98	Normal differentiation patterns in plants lacking microtubular preprophase bands. Nature, 1995, 375, 676-677.	13.7	299
99	The membrane-associated cytoskeleton in cultured lens cells. Electron microscopical visualization in cleaved whole-mount preparations and platinum replicas. Experimental Eye Research, 1986, 43, 519-528.	1.2	13