Anthony Holtmaat

List of Publications by Year
in descending order

63 papers	8,525 citations	147726 31 h-index	123376 61 g-index
70 all docs	70 docs citations	70 times ranked	9260 citing authors

#	Article	IF	Citations
1	Experience-dependent structural synaptic plasticity in the mammalian brain. Nature Reviews Neuroscience, 2009, 10, 647-658.	4.9	1,569
2	Transient and Persistent Dendritic Spines in the Neocortex In Vivo. Neuron, 2005, 45, 279-291.	3.8	1,003
3	Long-term, high-resolution imaging in the mouse neocortex through a chronic cranial window. Nature Protocols, 2009, 4, 1128-1144.	5.5	894
4	Experience-dependent and cell-type-specific spine growth in the neocortex. Nature, 2006, 441, 979-983.	13.7	562
5	Spine growth precedes synapse formation in the adult neocortex in vivo. Nature Neuroscience, 2006, 9, 1117-1124.	7.1	506
6	Cell Type-Specific Structural Plasticity of Axonal Branches and Boutons in the Adult Neocortex. Neuron, 2006, 49, 861-875.	3.8	376
7	Activity-Dependent Structural Plasticity of Perisynaptic Astrocytic Domains Promotes Excitatory Synapse Stability. Current Biology, 2014, 24, 1679-1688.	1.8	294
8	Expression of the Gene Encoding the Chemorepellent Semaphorin III Is Induced in the Fibroblast Component of Neural Scar Tissue Formed Following Injuries of Adult But Not Neonatal CNS. Molecular and Cellular Neurosciences, 1999, 13, 143-166.	1.0	290
9	Sensory-evoked LTP driven by dendritic plateau potentials in vivo. Nature, 2014, 515, 116-119.	13.7	239
10	Functional and structural underpinnings of neuronal assembly formation in learning. Nature Neuroscience, 2016, 19, 1553-1562.	7.1	193
11	The Relationship between PSD-95 Clustering and Spine Stability<i>In Vivo</i>. Journal of Neuroscience, 2014, 34, 2075-2086.	1.7	183
12	Control of synaptic plasticity in deep cortical networks. Nature Reviews Neuroscience, 2018, 19, 166-180.	4.9	176
13	The mesoSPIM initiative: open-source light-sheet microscopes for imaging cleared tissue. Nature Methods, 2019, 16, 1105-1108.	9.0	174
14	Higher-Order Thalamocortical Inputs Gate Synaptic Long-Term Potentiation via Disinhibition. Neuron, 2019, 101, 91-102.e4.	3.8	170
15	Dendrites<i>In Vitro</i>and<i>In Vivo</i>Contain Microtubules of Opposite Polarity and Axon Formation Correlates with Uniform Plus-End-Out Microtubule Orientation. Journal of Neuroscience, 2016, 36, 1071-1085.	1.7	164
16	Structural Plasticity Underlies Experience-Dependent Functional Plasticity of Cortical Circuits. Journal of Neuroscience, 2010, 30, 4927-4932.	1.7	118
17	Modality-specific thalamocortical inputs instruct the identity of postsynaptic L4 neurons. Nature, 2014, 511, 471-474.	13.7	116
18	Anatomical distribution of the chemorepellent semaphorin III/collapsin-1 in the adult rat and human brain: Predominant expression in structures of the olfactory-hippocampal pathway and the motor system. , 1998, 52, 27-42.		113

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19	The astrocyte/meningeal cell interface is a barrier to neurite outgrowth which can be overcome by manipulation of inhibitory molecules or axonal signalling pathways. Molecular and Cellular Neurosciences, 2003, 24, 913-925.	1.0	102
20	Dendritic Spine Instability Leads to Progressive Neocortical Spine Loss in a Mouse Model of Huntington's Disease. Journal of Neuroscience, 2013, 33, 12997-13009.	1.7	87
21	Transient gene transfer to neurons and glia: Analysis of adenoviral vector performance in the CNS and PNS. Journal of Neuroscience Methods, 1997, 71, 85-98.	1.3	81
22	Directed expression of the growth-associated protein B-50/GAP-43 to olfactory neurons in transgenic mice results in changes in axon morphology and extraglomerular fiber growth. Journal of Neuroscience, 1995, 15, 7953-7965.	1.7	79
23	Correlative In Vivo 2 Photon and Focused Ion Beam Scanning Electron Microscopy of Cortical Neurons. PLoS ONE, 2013, 8, e57405.	1.1	79
24	Growth-associated protein GAP-43 and L1 act synergistically to promote regenerative growth of Purkinje cell axons in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 14883-14888.	3.3	76
25	A protocol for preparing GFP-labeled neurons previously imaged in vivo and in slice preparations for light and electron microscopic analysis. Nature Protocols, 2009, 4, 1145-1156.	5.5	71
26	Dendritic spine plasticityâ€"Current understanding from in vivo studies. Brain Research Reviews, 2008, 58, 282-289.	9.1	61
27	Spike-Timing-Dependent Potentiation of Sensory Surround in the Somatosensory Cortex Is Facilitated by Deprivation-Mediated Disinhibition. Neuron, 2012, 75, 490-502.	3.8	58
28	Transcriptomic and anatomic parcellation of 5-HT3AR expressing cortical interneuron subtypes revealed by single-cell RNA sequencing. Nature Communications, 2017, 8, 14219.	5.8	51
29	Semiautomated correlative 3D electron microscopy of in vivoâ€"imaged axons and dendrites. Nature Protocols, 2014, 9, 1354-1366.	5.5	45
30	Imaging Neocortical Neurons through a Chronic Cranial Window. Cold Spring Harbor Protocols, 2012, 2012, pdb.prot069617-pdb.prot069617.	0.2	44
31	Imaging of experience-dependent structural plasticity in the mouse neocortex in vivo. Behavioural Brain Research, 2008, 192, 20-25.	1.2	42
32	Adenoviral Vector-Mediated Expression of B-50/GAP-43 Induces Alterations in the Membrane Organization of Olfactory Axon TerminalsIn Vivo. Journal of Neuroscience, 1997, 17, 6575-6586.	1.7	40
33	Neurogliaform cortical interneurons derive from cells in the preoptic area. ELife, 2018, 7, .	2.8	40
34	GAP-43mRNA and protein expression in the hippocampal and parahippocampal region during the course of epileptogenesis in rats. European Journal of Neuroscience, 2003, 17, 2369-2380.	1.2	30
35	Input-dependent regulation of excitability controls dendritic maturation in somatosensory thalamocortical neurons. Nature Communications, 2017, 8, 2015.	5.8	30
36	Efficient adenoviral vector-directed expression of a foreign gene to neurons and sustentacular cells in the mouse olfactory neuroepithelium. Molecular Brain Research, 1996, 41, 148-156.	2.5	28

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37	Peptide-induced grooming behavior and caudate nucleus dopamine release. Brain Research, 1993, 625, 169-172.	1.1	27
38	Temporal Sharpening of Sensory Responses by Layer V in the Mouse Primary Somatosensory Cortex. Current Biology, 2020, 30, 1589-1599.e10.	1.8	25
39	Correlative In Vivo 2-Photon Imaging and Focused Ion Beam Scanning Electron Microscopy. Methods in Cell Biology, 2014, 124, 339-361.	0.5	23
40	Optical imaging of structural and functional synaptic plasticity in vivo. European Journal of Pharmacology, 2013, 719, 128-136.	1.7	22
41	Manipulation of gene expression in the mammalian nervous system: application in the study of neurite outgrowth and neuroregeneration-related proteins. Brain Research Reviews, 1998, 26, 43-71.	9.1	21
42	Peripheral Deafferentation-Driven Functional Somatosensory Map Shifts Are Associated with Local, Not Large-Scale Dendritic Structural Plasticity. Journal of Neuroscience, 2013, 33, 9474-9487.	1.7	21
43	Chapter 12 Semaphorin III: Role in neuronal development and structural plasticity. Progress in Brain Research, 1998, 117, 133-149.	0.9	20
44	Dynamic perceptual feature selectivity in primary somatosensory cortex upon reversal learning. Nature Communications, 2020, 11, 3245.	5.8	19
45	Computer assisted detection of axonal bouton structural plasticity in in vivo time-lapse images. ELife, 2017, 6, .	2.8	18
46	Semaphorins: contributors to structural stability of hippocampal networks?. Progress in Brain Research, 2002, 138, 17-38.	0.9	16
47	Synchronism of pressor response and grooming behavior in freely moving, conscious rats following intracerebroventicular administration of ACTH/MSH-like peptides. Brain Research, 1993, 631, 265-269.	1.1	15
48	Single cell electroporation for longitudinal imaging of synaptic structure and function in the adult mouse neocortex in vivo. Frontiers in Neuroanatomy, 2015, 9, 36.	0.9	13
49	An increase in dendritic plateau potentials is associated with experience-dependent cortical map reorganization. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	11
50	Circuit mechanisms for cortical plasticity and learning. Seminars in Cell and Developmental Biology, 2022, 125, 68-75.	2.3	10
51	Reconstructing Evolving Tree Structures in Time Lapse Sequences. , 2014, , .		7
52	Rejuvenating brain plasticity. Science, 2017, 356, 1335-1336.	6.0	7
53	A subpopulation of cortical VIP-expressing interneurons with highly dynamic spines. Communications Biology, 2022, 5, 352.	2.0	7
54	Reconstructing Evolving Tree Structures in Time Lapse Sequences by Enforcing Time-Consistency. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2018, 40, 755-761.	9.7	6

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55	Synapses Let Loose for a Change: Inhibitory Synapse Pruning throughout Experience-Dependent Cortical Plasticity. Neuron, 2012, 74, 214-217.	3.8	5
56	Dendritic Branch-constrained N-Methyl-d-Aspartate Receptor-mediated Spikes Drive Synaptic Plasticity in Hippocampal CA3 Pyramidal Cells. Neuroscience, 2022, 489, 57-68.	1.1	5
57	Dominique Muller (1956â€"2015). Neuron, 2015, 87, 12-13.	3.8	3
58	New recipes with CaMPARI for â€˜snapshotsâ€™ of synaptic circuit activity. Journal of Physiology, 2017, 595, 1435-1436.	1.3	3
59	Transgenic expression of B-50/GAP-43 in mature olfactory neurons triggers downregulation of native B-50/GAP-43 expression in immature olfactory neurons. Molecular Brain Research, 1999, 74, 197-207.	2.5	2
60	Dissonant Synapses Shall Be Punished. Neuron, 2015, 87, 245-247.	3.8	2
61	Reply to â€˜Can neocortical feedback alter the sign of plasticity?â€™. Nature Reviews Neuroscience, 2018, 19, 637-638.	4.9	2
62	Toward Biophysical Mechanisms of Neocortical Computation after 50 Years of Barrel Cortex Research. Function, 2020, 2, zqaa046.	1.1	2
63	Structural Plasticity and Cortical Connectivity. , 2017, , 3-26.		1