Michael Hausser

List of Publications by Year
in descending order

126 papers	21,279 citations	12330 69 h-index	16183 124 g-index
144 all docs	144 docs citations	144 times ranked	15109 citing authors

#	Article	IF	Citations
1	Fully integrated silicon probes for high-density recording of neural activity. Nature, 2017, 551, 232-236.	27.8	1,531
2	DENDRITIC COMPUTATION. Annual Review of Neuroscience, 2005, 28, 503-532.	10.7	958
3	Diversity and Dynamics of Dendritic Signaling. Science, 2000, 290, 739-744.	12.6	700
4	Action potential initiation and backpropagation in neurons of the mammalian CNS. Trends in Neurosciences, 1997, 20, 125-131.	8.6	671
5	Dendritic Excitability and Synaptic Plasticity. Physiological Reviews, 2008, 88, 769-840.	28.8	607
6	Integration of quanta in cerebellar granule cells during sensory processing. Nature, 2004, 428, 856-860.	27.8	606
7	Tonic Synaptic Inhibition Modulates Neuronal Output Pattern and Spatiotemporal Synaptic Integration. Neuron, 1997, 19, 665-678.	8.1	577
8	Propagation of Action Potentials in Dendrites Depends on Dendritic Morphology. Journal of Neurophysiology, 2001, 85, 926-937.	1.8	537
9	Inhibition dominates sensory responses in the awake cortex. Nature, 2013, 493, 97-100.	27.8	494
10	Simultaneous all-optical manipulation and recording of neural circuit activity with cellular resolution in vivo. Nature Methods, 2015, 12, 140-146.	19.0	494
11	Neuropixels 2.0: A miniaturized high-density probe for stable, long-term brain recordings. Science, 2021, 372, .	12.6	467
12	Coincidence detection in single dendritic spines mediated by calcium release. Nature Neuroscience, 2000, 3, 1266-1273.	14.8	432
13	Sensitivity to perturbations in vivo implies high noise and suggests rate coding in cortex. Nature, 2010, 466, 123-127.	27.8	399
14	Dendritic Discrimination of Temporal Input Sequences in Cortical Neurons. Science, 2010, 329, 1671-1675.	12.6	398
15	Electrophysiology in the age of light. Nature, 2009, 461, 930-939.	27.8	395
16	A Cooperative Switch Determines the Sign of Synaptic Plasticity in Distal Dendrites of Neocortical Pyramidal Neurons. Neuron, 2006, 51, 227-238.	8.1	366
17	Dendritic spikes enhance stimulus selectivity in cortical neurons in vivo. Nature, 2013, 503, 115-120.	27.8	362
18	One Rule to Grow Them All: A General Theory of Neuronal Branching and Its Practical Application. PLoS Computational Biology, 2010, 6, e1000877.	3.2	340

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19	Targeted patch-clamp recordings and single-cell electroporation of unlabeled neurons in vivo. Nature Methods, 2008, 5, 61-67.	19.0	332
20	All-Optical Interrogation of Neural Circuits. Journal of Neuroscience, 2015, 35, 13917-13926.	3.6	320
21	Dendrites: bug or feature?. Current Opinion in Neurobiology, 2003, 13, 372-383.	4.2	316
22	Initiation and spread of sodium action potentials in cerebellar purkinje cells. Neuron, 1994, 13, 703-712.	8.1	310
23	Dendritic coincidence detection of EPSPs and action potentials. Nature Neuroscience, 2001, 4, 63-71.	14.8	303
24	The single dendritic branch as a fundamental functional unit in the nervous system. Current Opinion in Neurobiology, 2010, 20, 494-502.	4.2	301
25	Targeting neurons and photons for optogenetics. Nature Neuroscience, 2013, 16, 805-815.	14.8	297
26	Synaptic Integration Gradients in Single Cortical Pyramidal Cell Dendrites. Neuron, 2011, 69, 885-892.	8.1	293
27	Bistability of cerebellar Purkinje cells modulated by sensory stimulation. Nature Neuroscience, 2005, 8, 202-211.	14.8	292
28	Feed-forward inhibition shapes the spike output of cerebellar Purkinje cells. Journal of Physiology, 2005, 563, 369-378.	2.9	275
29	High-fidelity transmission of sensory information by single cerebellar mossy fibre boutons. Nature, 2007, 450, 1245-1248.	27.8	265
30	Axonal initiation and active dendritic propagation of action potentials in substantia nigra neurons. Neuron, 1995, 15, 637-647.	8.1	257
31	Cellular mechanisms of spatial navigation in the medial entorhinal cortex. Nature Neuroscience, 2013, 16, 325-331.	14.8	249
32	Compartmental models of rat cerebellar Purkinje cells based on simultaneous somatic and dendritic patchâ€clamp recordings. Journal of Physiology, 2001, 535, 445-472.	2.9	246
33	Aberrant Cortical Activity in Multiple GCaMP6-Expressing Transgenic Mouse Lines. ENeuro, 2017, 4, ENEURO.0207-17.2017.	1.9	221
34	Encoding of Oscillations by Axonal Bursts in Inferior Olive Neurons. Neuron, 2009, 62, 388-399.	8.1	203
35	Parallel processing of visual space by neighboring neurons in mouse visual cortex. Nature Neuroscience, 2010, 13, 1144-1149.	14.8	194
36	Predictive and reactive reward signals conveyed by climbing fiber inputs to cerebellar Purkinje cells. Nature Neuroscience, 2019, 22, 950-962.	14.8	177

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37	The Origin of the Complex Spike in Cerebellar Purkinje Cells. Journal of Neuroscience, 2008, 28, 7599-7609.	3.6	176
38	Traveling waves in developing cerebellar cortex mediated by asymmetrical Purkinje cell connectivity. Nature Neuroscience, 2009, 12, 463-473.	14.8	170
39	Optogenetics: the age of light. Nature Methods, 2014, 11, 1012-1014.	19.0	166
40	Cerebellar LTD and Pattern Recognition by Purkinje Cells. Neuron, 2007, 54, 121-136.	8.1	161
41	Membrane potential bistability is controlled by the hyperpolarizationâ€activated current I H in rat cerebellar Purkinje neurons in vitro. Journal of Physiology, 2002, 539, 469-483.	2.9	153
42	Targeted Activation of Hippocampal Place Cells Drives Memory-Guided Spatial Behavior. Cell, 2020, 183, 1586-1599.e10.	28.9	153
43	Dendritic patch-clamp recording. Nature Protocols, 2006, 1, 1235-1247.	12.0	146
44	The information efficacy of a synapse. Nature Neuroscience, 2002, 5, 332-340.	14.8	141
45	Determinants of Action Potential Propagation in Cerebellar Purkinje Cell Axons. Journal of Neuroscience, 2005, 25, 464-472.	3.6	141
46	A proportional but slower NMDA potentiation follows AMPA potentiation in LTP. Nature Neuroscience, 2004, 7, 518-524.	14.8	139
47	Tonic Inhibition Enhances Fidelity of Sensory Information Transmission in the Cerebellar Cortex. Journal of Neuroscience, 2012, 32, 11132-11143.	3.6	135
48	A scaling law derived from optimal dendritic wiring. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 11014-11018.	7.1	135
49	Estimating the Time Course of the Excitatory Synaptic Conductance in Neocortical Pyramidal Cells Using a Novel Voltage Jump Method. Journal of Neuroscience, 1997, 17, 7606-7625.	3.6	134
50	The site of action potential initiation in cerebellar Purkinje neurons. Nature Neuroscience, 2005, 8, 137-139.	14.8	132
51	Targeted single-cell electroporation of mammalian neurons in vivo. Nature Protocols, 2009, 4, 862-869.	12.0	131
52	Closed-loop all-optical interrogation of neural circuits in vivo. Nature Methods, 2018, 15, 1037-1040.	19.0	128
53	Spatial Pattern Coding of Sensory Information by Climbing Fiber-Evoked Calcium Signals in Networks of Neighboring Cerebellar Purkinje Cells. Journal of Neuroscience, 2009, 29, 8005-8015.	3.6	125
54	Multimodal sensory integration in single cerebellar granule cells in vivo. ELife, 2015, 4, .	6.0	125

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55	Optogenetics: 10 years after ChR2 in neuronsâ€”views from the community. Nature Neuroscience, 2015, 18, 1202-1212.	14.8	122
56	Dendritic Calcium Spikes Are Tunable Triggers of Cannabinoid Release and Short-Term Synaptic Plasticity in Cerebellar Purkinje Neurons. Journal of Neuroscience, 2006, 26, 5428-5437.	3.6	116
57	Target-Specific Effects of Somatostatin-Expressing Interneurons on Neocortical Visual Processing. Journal of Neuroscience, 2013, 33, 19567-19578.	3.6	110
58	The Hodgkin-Huxley theory of the action potential. Nature Neuroscience, 2000, 3, 1165-1165.	14.8	106
59	Structured Connectivity in Cerebellar Inhibitory Networks. Neuron, 2014, 81, 913-929.	8.1	103
60	Synaptic representation of locomotion in single cerebellar granule cells. ELife, 2015, 4, .	6.0	103
61	Dendritic Calcium Signaling Triggered by Spontaneous and Sensory-Evoked Climbing Fiber Input to Cerebellar Purkinje Cells In Vivo. Journal of Neuroscience, 2011, 31, 10847-10858.	3.6	99
62	Linking Synaptic Plasticity and Spike Output at Excitatory and Inhibitory Synapses onto Cerebellar Purkinje Cells. Journal of Neuroscience, 2007, 27, 5559-5570.	3.6	97
63	Differential Shunting of EPSPs by Action Potentials. Science, 2001, 291, 138-141.	12.6	95
64	Synaptic function: Dendritic democracy. Current Biology, 2001, 11, R10-R12.	3.9	95
65	Targeted dendrotomy reveals active and passive contributions of the dendritic tree to synaptic integration and neuronal output. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 11447-11452.	7.1	91
66	A Preferentially Segregated Recycling Vesicle Pool of Limited Size Supports Neurotransmission in Native Central Synapses. Neuron, 2012, 76, 579-589.	8.1	89
67	Local and Global Effects of<i>I</i>_hDistribution in Dendrites of Mammalian Neurons. Journal of Neuroscience, 2007, 27, 8643-8653.	3.6	88
68	Standardized and reproducible measurement of decision-making in mice. ELife, 2021, 10, .	6.0	88
69	Millisecond Coupling of Local Field Potentials to Synaptic Currents in the Awake Visual Cortex. Neuron, 2016, 90, 35-42.	8.1	87
70	How many neurons are sufficient for perception of cortical activity?. ELife, 2020, 9, .	6.0	82
71	RAPID REPORT: Initiation of simple and complex spikes in cerebellar Purkinje cells. Journal of Physiology, 2010, 588, 1709-1717.	2.9	81
72	The Beat Goes On: Spontaneous Firing in Mammalian Neuronal Microcircuits. Journal of Neuroscience, 2004, 24, 9215-9219.	3.6	73

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73	The TREES Toolboxâ€"Probing the Basis of Axonal and Dendritic Branching. Neuroinformatics, 2011, 9, 91-96.	2.8	73
74	An excitatory basis for divisive normalization in visual cortex. Nature Neuroscience, 2016, 19, 568-570.	14.8	69
75	Reading out a spatiotemporal population code by imaging neighbouring parallel fibre axons in vivo. Nature Communications, 2015, 6, 6464.	12.8	68
76	Active dendritic integration as a mechanism for robust and precise grid cell firing. Nature Neuroscience, 2017, 20, 1114-1121.	14.8	66
77	Synaptically Induced Long-Term Modulation of Electrical Coupling in the Inferior Olive. Neuron, 2014, 81, 1290-1296.	8.1	63
78	Controlling neural circuits with light. Nature, 2007, 446, 617-619.	27.8	61
79	NKX2-1 Is Required in the Embryonic Septum for Cholinergic System Development, Learning, and Memory. Cell Reports, 2017, 20, 1572-1584.	6.4	61
80	An International Laboratory for Systems and Computational Neuroscience. Neuron, 2017, 96, 1213-1218.	8.1	60
81	The density of AMPA receptors activated by a transmitter quantum at the climbing fibreâ€Purkinje cell synapse in immature rats. Journal of Physiology, 2003, 549, 75-92.	2.9	58
82	Control of cerebellar granule cell output by sensory-evoked Golgi cell inhibition. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 13099-13104.	7.1	58
83	Kinetics of in vitro decarboxylation and the in vivo metabolism of 2-18F- and 6-18F-fluoroDOPA in the hooded rat. Biochemical Pharmacology, 1988, 37, 247-250.	4.4	56
84	Distal connectivity causes summation and division across mouse visual cortex. Nature Neuroscience, 2014, 17, 30-32.	14.8	56
85	Conditional Spike Transmission Mediated by Electrical Coupling Ensures Millisecond Precision-Correlated Activity among Interneurons InÂVivo. Neuron, 2016, 90, 810-823.	8.1	52
86	International Brain Initiative: An Innovative Framework for Coordinated Global Brain Research Efforts. Neuron, 2020, 105, 212-216.	8.1	50
87	Inverse Stochastic Resonance in Cerebellar Purkinje Cells. PLoS Computational Biology, 2016, 12, e1005000.	3.2	49
88	A New Approach for Determining Phase Response Curves Reveals that Purkinje Cells Can Act as Perfect Integrators. PLoS Computational Biology, 2010, 6, e1000768.	3.2	46
89	To the Cloud! A Grassroots Proposal to Accelerate Brain Science Discovery. Neuron, 2016, 92, 622-627.	8.1	46
90	Microcircuit Rules Governing Impact of Single Interneurons on Purkinje Cell Output InÂVivo. Cell Reports, 2020, 30, 3020-3035.e3.	6.4	43

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91	Neural Coding: Hybrid Analog and Digital Signalling in Axons. Current Biology, 2006, 16, R585-R588.	3.9	42
92	Quantitative comparison of genetically encoded Ca2+ indicators in cortical pyramidal cells and cerebellar purkinje cells. Frontiers in Cellular Neuroscience, 2011, 5, 18.	3.7	42
93	Dendritic NMDA receptors in parvalbumin neurons enable strong and stable neuronal assemblies. ELife, 2019, 8, .	6.0	42
94	Reward signals in the cerebellum: Origins, targets, and functional implications. Neuron, 2022, 110, 1290-1303.	8.1	42
95	Active dendrites enable strong but sparse inputs to determine orientation selectivity. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	36
96	Dendritic spikes mediate negative synaptic gain control in cerebellar Purkinje cells. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22284-22289.	7.1	32
97	Dendritic Enlightenment: Using Patterned Two-Photon Uncaging to Reveal the Secrets of the Brain's Smallest Dendrites. Neuron, 2006, 50, 180-183.	8.1	30
98	All-optical interrogation of neural circuits in behaving mice. Nature Protocols, 2022, 17, 1579-1620.	12.0	29
99	A synaptic learning rule for exploiting nonlinear dendritic computation. Neuron, 2021, 109, 4001-4017.e10.	8.1	28
100	CaRuby-Nano: a novel high affinity calcium probe for dual color imaging. ELife, 2015, 4, .	6.0	27
101	Purkinje Cell Activity Determines the Timing of Sensory-Evoked Motor Initiation. Cell Reports, 2020, 33, 108537.	6.4	20
102	Information Processing in Dendrites and Spines. , 2013, , 231-260.		19
103	Neuronal Microcircuits: Frequency-Dependent Flow of Inhibition. Current Biology, 2004, 14, R837-R839.	3.9	18
104	A better way to crack the brain. Nature, 2016, 539, 159-161.	27.8	18
105	Loss of Bardet-Biedl syndrome proteins causes synaptic aberrations in principal neurons. PLoS Biology, 2019, 17, e3000414.	5.6	17
106	A plastic axonal hotspot. Nature, 2010, 465, 1022-1023.	27.8	16
107	Predicting the synaptic information efficacy in cortical layer 5 pyramidal neurons using a minimal integrate-and-fire model. Biological Cybernetics, 2008, 99, 393-401.	1.3	14
108	Are Human Dendrites Different?. Trends in Cognitive Sciences, 2020, 24, 411-412.	7.8	14

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109	Lighting up neural networks using a new generation of genetically encoded calcium sensors. Nature Methods, 2009, 6, 871-872.	19.0	13
110	How to build a grid cell. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20120520.	4.0	11
111	Twitching towards the ideal calcium sensor. Nature Methods, 2014, 11, 139-140.	19.0	10
112	Revealing the Properties of Dendritic Voltage-Gated Channels: A New Approach to the Space Clamp Problem. Biophysical Journal, 2003, 84, 3497-3498.	0.5	9
113	Two-Photon Targeted Patching and Electroporation In Vivo. Cold Spring Harbor Protocols, 2014, 2014, pdb.prot080143.	0.3	9
114	Purkinje cells in awake behaving animals operate in stable upstate membrane potential. Nature Neuroscience, 2006, 9, 461-461.	14.8	8
115	Storing memories in dendritic channels. Nature Neuroscience, 2004, 7, 98-100.	14.8	7
116	Optogenetics â€" The Might of Light. New England Journal of Medicine, 2021, 385, 1623-1626.	27.0	7
117	Less Means More. Neuron, 2003, 40, 449-451.	8.1	5
118	The Selfish Spike: Local and Global Resets of Dendritic Excitability. Neuron, 2009, 61, 815-817.	8.1	5
119	Electrical Properties of Dendrites Relevant to Dendritic Transmitter Release. , 2005, , 55-67.		2
120	Building Bridges through Science. Neuron, 2017, 96, 730-735.	8.1	2
121	Dendritic Ventriloquism: Inhibitory Synapses Throw Their Voices. Neuron, 2012, 75, 190-193.	8.1	1
122	Signalling mechanisms. Current Opinion in Neurobiology, 2008, 18, 229-231.	4.2	0
123	Probing the functional properties of mammalian dendrites (R. Llinas and M. Sugimori, J. Physiology,) Tj ETQq1 1 0.784314 rgBT /Overl	2.5	0
124	Synaptic input patterns triggering local dendritic spikes in vivo. BMC Neuroscience, 2015, 16, .	1.9	0
125	Dendritic Inhibitory Synapses Punch above Their Weight. Neuron, 2015, 87, 465-468.	8.1	0
126	Wilfrid Rall (1922â€"2018). Neuron, 2018, 99, 877-879.	8.1	0