Barry W Connors

List of Publications by Year
in descending order

107 papers	15,182 citations	34105 52 h-index	43889 91 g-index
115 all docs	115 docs citations	115 times ranked	9356 citing authors

#	Article	IF	Citations
1	Two networks of electrically coupled inhibitory neurons in neocortex. Nature, 1999, 402, 75-79.	27.8	1,314
2	Intrinsic firing patterns of diverse neocortical neurons. Trends in Neurosciences, 1990, 13, 99-104.	8.6	1,269
3	ELECTRICAL SYNAPSES IN THE MAMMALIAN BRAIN. Annual Review of Neuroscience, 2004, 27, 393-418.	10.7	665
4	Thalamocortical responses of mouse somatosensory (barrel) cortexin vitro. Neuroscience, 1991, 41, 365-379.	2.3	658
5	Synchronous Activity of Inhibitory Networks in Neocortex Requires Electrical Synapses Containing Connexin36. Neuron, 2001, 31, 477-485.	8.1	533
6	Two Dynamically Distinct Inhibitory Networks in Layer 4 of the Neocortex. Journal of Neurophysiology, 2003, 90, 2987-3000.	1.8	530
7	Differential Regulation of Neocortical Synapses by Neuromodulators and Activity. Neuron, 1997, 19, 679-686.	8.1	527
8	Synaptic basis for intense thalamocortical activation of feedforward inhibitory cells in neocortex. Nature Neuroscience, 2007, 10, 462-468.	14.8	507
9	Two inhibitory postsynaptic potentials, and GABAA and GABAB receptorâ€mediated responses in neocortex of rat and cat.. Journal of Physiology, 1988, 406, 443-468.	2.9	483
10	A network of electrically coupled interneurons drives synchronized inhibition in neocortex. Nature Neuroscience, 2000, 3, 904-910.	14.8	462
11	Pathway-Specific Feedforward Circuits between Thalamus and Neocortex Revealed by Selective Optical Stimulation of Axons. Neuron, 2010, 65, 230-245.	8.1	394
12	Electrical Synapses in the Thalamic Reticular Nucleus. Journal of Neuroscience, 2002, 22, 1002-1009.	3.6	366
13	Initiation of synchronized neuronal bursting in neocortex. Nature, 1984, 310, 685-687.	27.8	338
14	Potent block of Cx36 and Cx50 gap junction channels by mefloquine. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 12364-12369.	7.1	315
15	Efficacy of Thalamocortical and Intracortical Synaptic Connections. Neuron, 1999, 23, 385-397.	8.1	310
16	Intrinsic Firing Patterns and Whisker-Evoked Synaptic Responses of Neurons in the Rat Barrel Cortex. Journal of Neurophysiology, 1999, 81, 1171-1183.	1.8	287
17	Rat optic nerve: Electrophysiological, pharmacological and anatomical studies during development. Developmental Brain Research, 1982, 3, 371-386.	1.7	267
18	Selective, State-Dependent Activation of Somatostatin-Expressing Inhibitory Interneurons in Mouse Neocortex. Journal of Neurophysiology, 2008, 100, 2640-2652.	1.8	237

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19	A Corticothalamic Switch: Controlling the Thalamus with Dynamic Synapses. Neuron, 2015, 86, 768-782.	8.1	233
20	Sensory experience modifies the short-term dynamics of neocortical synapses. Nature, 1999, 400, 367-371.	27.8	227
21	Rhythmicity without Synchrony in the Electrically Uncoupled Inferior Olive. Journal of Neuroscience, 2002, 22, 10898-10905.	3.6	217
22	Functional Properties of Electrical Synapses Between Inhibitory Interneurons of Neocortical Layer 4. Journal of Neurophysiology, 2005, 93, 467-480.	1.8	209
23	The Spatial Dimensions of Electrically Coupled Networks of Interneurons in the Neocortex. Journal of Neuroscience, 2002, 22, 4142-4152.	3.6	208
24	Initiation, Propagation, and Termination of Epileptiform Activity in Rodent Neocortex In Vitro Involve Distinct Mechanisms. Journal of Neuroscience, 2005, 25, 8131-8140.	3.6	198
25	Synchronization of Electrically Coupled Pairs of Inhibitory Interneurons in Neocortex. Journal of Neuroscience, 2007, 27, 2058-2073.	3.6	198
26	Thalamic Control of Layer 1 Circuits in Prefrontal Cortex. Journal of Neuroscience, 2012, 32, 17813-17823.	3.6	190
27	Backward cortical projections to primary somatosensory cortex in rats extend long horizontal axons in layer I. Journal of Comparative Neurology, 1998, 390, 297-310.	1.6	175
28	Small Clusters of Electrically Coupled Neurons Generate Synchronous Rhythms in the Thalamic Reticular Nucleus. Journal of Neuroscience, 2004, 24, 341-349.	3.6	174
29	Electrical synapses coordinate activity in the suprachiasmatic nucleus. Nature Neuroscience, 2005, 8, 61-66.	14.8	172
30	Integrated device for optical stimulation and spatiotemporal electrical recording of neural activity in light-sensitized brain tissue. Journal of Neural Engineering, 2009, 6, 055007.	3.5	166
31	Dye-coupling between glial cells in the guinea pig neocortical slice. Brain Research, 1981, 213, 486-492.	2.2	156
32	Long-Term Modulation of Electrical Synapses in the Mammalian Thalamus. Science, 2005, 310, 1809-1813.	12.6	151
33	Repetitive burst-firing neurons in the deep layers of mouse somatosensory cortex. Neuroscience Letters, 1989, 99, 137-141.	2.1	149
34	Contributions of Diverse Excitatory and Inhibitory Neurons to Recurrent Network Activity in Cerebral Cortex. Journal of Neuroscience, 2015, 35, 1089-1105.	3.6	145
35	Short-Term Dynamics of Thalamocortical and Intracortical Synapses Onto Layer 6 Neurons in Neocortex. Journal of Neurophysiology, 2002, 88, 1924-1932.	1.8	138
36	Cellular Mechanisms of the Augmenting Response: Short-Term Plasticity in a Thalamocortical Pathway. Journal of Neuroscience, 1996, 16, 7742-7756.	3.6	119

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37	Layer-Specific Pathways for the Horizontal Propagation of Epileptiform Discharges in Neocortex. Epilepsia, 1998, 39, 700-708.	5.1	110
38	THALAMOCORTICAL SYNAPSES. Progress in Neurobiology, 1997, 51, 581-606.	5.7	108
39	Short-term synaptic enhancement and long-term potentiation in neocortex.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 1335-1339.	7.1	105
40	VPM and PoM Nuclei of the Rat Somatosensory Thalamus: Intrinsic Neuronal Properties and Corticothalamic Feedback. Cerebral Cortex, 2007, 17, 2853-2865.	2.9	99
41	The Roles of Somatostatin-Expressing (GIN) and Fast-Spiking Inhibitory Interneurons in<scp>up-down</scp>States of Mouse Neocortex. Journal of Neurophysiology, 2010, 104, 596-606.	1.8	96
42	High temperatures alter physiological properties of pyramidal cells and inhibitory interneurons in hippocampus. Frontiers in Cellular Neuroscience, 2012, 6, 27.	3.7	90
43	A Microelectrode/Microelectronic Hybrid Device for Brain Implantable Neuroprosthesis Applications. IEEE Transactions on Biomedical Engineering, 2004, 51, 1845-1853.	4.2	88
44	Synchrony and so much more: Diverse roles for electrical synapses in neural circuits. Developmental Neurobiology, 2017, 77, 610-624.	3.0	88
45	Distinct forms of short-term plasticity at excitatory synapses of hippocampus and neocortex. Proceedings of the National Academy of Sciences of the United States of America, 1997, 94, 4161-4166.	7.1	84
46	Early Life Stress Drives Sex-Selective Impairment in Reversal Learning by Affecting Parvalbumin Interneurons in Orbitofrontal Cortex of Mice. Cell Reports, 2018, 25, 2299-2307.e4.	6.4	82
47	Abrupt Maturation of a Spike-Synchronizing Mechanism in Neocortex. Journal of Neuroscience, 2005, 25, 7309-7316.	3.6	78
48	Tales of a Dirty Drug: Carbenoxolone, Gap Junctions, and Seizures. Epilepsy Currents, 2012, 12, 66-68.	0.8	78
49	Infrabarrels Are Layer 6 Circuit Modules in the Barrel Cortex that Link Long-Range Inputs and Outputs. Cell Reports, 2017, 21, 3065-3078.	6.4	63
50	Development of a chipscale integrated microelectrode/microelectronic device for brain implantable neuroengineering applications. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2005, 13, 220-226.	4.9	62
51	Mechanisms of epileptogenesis in cortical structures. Annals of Neurology, 1984, 16, S59-S64.	5.3	61
52	Temporal and Mosaic Tsc1 Deletion in the Developing Thalamus Disrupts Thalamocortical Circuitry, Neural Function, and Behavior. Neuron, 2013, 78, 895-909.	8.1	60
53	Functions of Very Distal Dendrites: Experimental and Computational Studies of Layer I Synapses on Neocortical Pyramidal Cells. , 1992, , 199-229.		60
54	Brain Extracellular Space: Developmental Studies in Rat Optic Nerve. Annals of the New York Academy of Sciences, 1986, 481, 87-104.	3.8	59

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55	Two Functionally Distinct Networks of Gap Junction-Coupled Inhibitory Neurons in the Thalamic Reticular Nucleus. Journal of Neuroscience, 2014, 34, 13170-13182.	3.6	59
56	Two dynamically distinct circuits drive inhibition in the sensory thalamus. Nature, 2020, 583, 813-818.	27.8	56
57	Making Waves in the Neocortex. Neuron, 1997, 18, 347-349.	8.1	50
58	Single-neuron mnemonics. Nature, 2002, 420, 133-134.	27.8	49
59	Strong Coupling of Nonlinear Electronic and Biological Oscillators: Reaching the â€œAmplitude Deathâ€• Regime. Physical Review Letters, 2004, 93, 158102.	7.8	49
60	Electrical and chemical synapses between relay neurons in developing thalamus. Journal of Physiology, 2010, 588, 2403-2415.	2.9	49
61	Electrical synapses and the development of inhibitory circuits in the thalamus. Journal of Physiology, 2016, 594, 2579-2592.	2.9	44
62	LTS and FS Inhibitory Interneurons, Short-Term Synaptic Plasticity, and Cortical Circuit Dynamics. PLoS Computational Biology, 2011, 7, e1002248.	3.2	40
63	A comparison of the effects of pentobarbital and diphenylhydantoin on the GABA sensitivity and excitability of adult sensory ganglion cells. Brain Research, 1981, 207, 357-369.	2.2	38
64	Stability of Electrical Coupling despite Massive Developmental Changes of Intrinsic Neuronal Physiology. Journal of Neuroscience, 2009, 29, 9761-9770.	3.6	38
65	Generation of epileptiform discharge by local circuits of neocortex. , 1993, , 388-423.		35
66	Neuronal firing: Does function follow form?. Current Biology, 1996, 6, 1560-1562.	3.9	35
67	Connexon connexions in the thalamocortical system. Progress in Brain Research, 2005, 149, 41-57.	1.4	34
68	Intrinsic Physiology and Morphology of Single Neurons in Neocortex. Cerebral Cortex, 1995, , 299-331.	0.6	33
69	Widely integrative properties of layer 5 pyramidal cells support a role for processing of extralaminar synaptic inputs in rat neocortex. Neuroscience Letters, 2003, 343, 121-124.	2.1	33
70	Distinct Roles of SOM and VIP Interneurons during Cortical Up States. Frontiers in Neural Circuits, 2016, 10, 52.	2.8	33
71	Epileptiform Propagation Patterns Mediated by NMDA and Non-NMDA Receptors in Rat Neocortex. Epilepsia, 1999, 40, 1499-1506.	5.1	31
72	Bidirectional Modulation of Recognition Memory. Journal of Neuroscience, 2015, 35, 13323-13335.	3.6	29

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73	Comment on â€œPrinciples of connectivity among morphologically defined cell types in adult neocortexâ€• Science, 2016, 353, 1108-1108.	12.6	24
74	Functions of Local Circuits in Neocortex: Synchrony and Laminae. , 1995, , 123-140.		24
75	Chapter 16 GABAA- and GABAB-mediated processes in visual cortex. Progress in Brain Research, 1992, 90, 335-348.	1.4	22
76	Local pathways of seizure propagation in neocortex. International Review of Neurobiology, 2001, 45, 527-546.	2.0	20
77	Synchronized gamma-frequency inhibition in neocortex depends on excitatory-inhibitory interactions but not electrical synapses. Journal of Neurophysiology, 2016, 116, 351-368.	1.8	20
78	Nitric Oxide-Mediated Plasticity of Interconnections Between T-Stellate cells of the Ventral Cochlear Nucleus Generate Positive Feedback and Constitute a Central Gain Control in the Auditory System. Journal of Neuroscience, 2019, 39, 6095-6107.	3.6	20
79	Semiconductor ultra-violet light-emitting diodes for flash photolysis. Journal of Neuroscience Methods, 2007, 160, 5-9.	2.5	15
80	Spontaneous dynamics of neural networks in deep layers of prefrontal cortex. Journal of Neurophysiology, 2017, 117, 1581-1594.	1.8	14
81	Electrophysiological and morphological properties of neurons in layer 5 of the rat postrhinal cortex. Hippocampus, 2012, 22, 1912-1922.	1.9	13
82	Developmental changes in somatostatin-positive interneurons in a freeze-lesion model of epilepsy. Epilepsy Research, 2006, 70, 161-171.	1.6	12
83	Bypassing interneurons: inhibition in neocortex. Nature Neuroscience, 2007, 10, 808-810.	14.8	12
84	Intrinsic neuronal physiology and the functions, dysfunctions and development of neocortex. Progress in Brain Research, 1994, 102, 195-203.	1.4	11
85	Enhanced Functions of Electrical Junctions. Neuron, 2010, 67, 354-357.	8.1	11
86	Diverse Ensembles of Inhibitory Interneurons. Neuron, 2016, 90, 4-6.	8.1	11
87	Neocortex. , 1984, , 313-339.		9
88	Electrical Signaling with Neuronal Gap Junctions. , 2009, , 143-164.		8
89	A microelectrode array incorporating an optical waveguide device for stimulation and spatiotemporal electrical recording of neural activity. , 2009, 2009, 2046-9.		5
90	Thalamus: Organization and Function (Vol. 1), Experimental and Clinical Aspects (Vol. 2). Trends in Neurosciences, 1998, 21, 539-540.	8.6	3

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91	Navigating a Sensorimotor Loop. Neuron, 2005, 45, 329-330.	8.1	3
92	State-sanctioned synchrony. Nature, 2008, 454, 839-840.	27.8	3
93	Integration and autonomy in axons. Nature Neuroscience, 2011, 14, 128-130.	14.8	3
94	Backward cortical projections to primary somatosensory cortex in rats extend long horizontal axons in layer I. Journal of Comparative Neurology, 1998, 390, 297-310.	1.6	3
95	Too Much of a Good Thing May Not be Wonderful: GluR1 Phosphorylation and the Consequences of Early-Life Seizures. Epilepsy Currents, 2013, 13, 124-126.	0.8	2
96	Backward cortical projections to primary somatosensory cortex in rats extend long horizontal axons in layer I. , 1998, 390, 297.		2
97	SENSORY TRANSDUCTION. , 2009, , 371-407.		1
98	Dendritic and Synaptic Variety in the Neocortex. Developmental Neuropsychology, 1999, 16, 311-313.	1.4	0
99	Integrated Optoelectronics for Neural Stimulation and Recording in Freely Moving Animals. , 2010, , .		0
100	The Ins and Outs of Interneurons in Epileptic Neocortex. Epilepsy Currents, 2011, 11, 198-199.	0.8	0
101	Neuregulation: NRG1 Tames Interneurons and Epilepsy. Epilepsy Currents, 2012, 12, 155-156.	0.8	0
102	Die synaptische Ãœbertragung. , 2009, , 113-147.		0
103	Neurotransmittersysteme. , 2009, , 149-186.		0
104	Das Aktionspotenzial. , 2009, , 83-111.		0
105	Psychische Erkrankungen. , 2009, , 747-776.		0
106	Das Auge. , 2009, , 303-337.		0
107	Das Aktionspotenzial. , 2018, , 85-115.		0