Nicholas C Spitzer

List of Publications by Year
in descending order

111 papers	9,636 citations	38742 50 h-index	37204 96 g-index

118 all docs	118 docs citations	118 times ranked	7558 citing authors

#	Article	IF	Citations
1	Mitochondrial Dysfunction Is a Primary Event in Glutamate Neurotoxicity. Journal of Neuroscience, 1996, 16, 6125-6133.	3.6	751
2	Electrical activity in early neuronal development. Nature, 2006, 444, 707-712.	27.8	655
3	Distinct aspects of neuronal differentiation encoded by frequency of spontaneous Ca2+ transients. Nature, 1995, 375, 784-787.	27.8	530
4	In vivo regulation of axon extension and pathfinding by growth-cone calcium transients. Nature, 1999, 397, 350-355.	27.8	448
5	Adaptation in the chemotactic guidance of nerve growth cones. Nature, 2002, 417, 411-418.	27.8	388
6	Activity-dependent homeostatic specification of transmitter expression in embryonic neurons. Nature, 2004, 429, 523-530.	27.8	381
7	Embryonic development of identified neurones: differentiation from neuroblast to neurone. Nature, 1979, 280, 208-214.	27.8	376
8	Neurotransmitter Switching in the Adult Brain Regulates Behavior. Science, 2013, 340, 449-453.	12.6	282
9	Filopodial Calcium Transients Promote Substrate-Dependent Growth Cone Turning. Science, 2001, 291, 1983-1987.	12.6	280
10	Calcium Signaling in Neuronal Development. Cold Spring Harbor Perspectives in Biology, 2011, 3, a004259-a004259.	5.5	241
11	A developmental handshake: Neuronal control of ionic currents and their control of neuronal differentiation. Journal of Neurobiology, 1991, 22, 659-673.	3.6	187
12	Calcium-induced release of calcium regulates differentiation of cultured spinal neurons. Neuron, 1991, 7, 787-796.	8.1	173
13	Dynamic interactions of cyclic AMP transients and spontaneous Ca2+ spikes. Nature, 2002, 418, 93-96.	27.8	157
14	Developmental changes in the inward current of the action potential of Rohonâ€Beard neurones. Journal of Physiology, 1977, 271, 93-117.	2.9	154
15	Orchestrating neuronal differentiation: patterns of Ca2+ spikes specify transmitter choice. Trends in Neurosciences, 2004, 27, 415-421.	8.6	143
16	Regulation of growth cone behavior by calcium: New dynamics to earlier perspectives. Journal of Neurobiology, 2000, 44, 174-183.	3.6	141
17	Regulation of Calcineurin by Growth Cone Calcium Waves Controls Neurite Extension. Journal of Neuroscience, 2000, 20, 315-325.	3.6	141
18	Activity-dependent neurotransmitter respecification. Nature Reviews Neuroscience, 2012, 13, 94-106.	10.2	136

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19	Spontaneous Ca2+ spikes and waves in embryonic neurons: signaling systems for differentiation. Trends in Neurosciences, 1994, 17, 115-118.	8.6	134
20	Coding of neuronal differentiation by calcium transients. BioEssays, 2000, 22, 811-817.	2.5	133
21	Spontaneous calcium influx and its roles in differentiation of spinal neurons in culture. Developmental Biology, 1990, 141, 13-23.	2.0	130
22	Action potentials, calcium transients and the control of differentiation of excitable cells. Current Opinion in Neurobiology, 1994, 4, 70-77.	4.2	124
23	Breaking the Code: Regulation of Neuronal Differentiation by Spontaneous Calcium Transients. Developmental Neuroscience, 1997, 19, 33-41.	2.0	118
24	Illumination controls differentiation of dopamine neurons regulating behaviour. Nature, 2008, 456, 195-201.	27.8	110
25	Activity-dependent neurotransmitter-receptor matching at the neuromuscular junction. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 335-340.	7.1	100
26	Neurotransmitter Switching in the Developing and Adult Brain. Annual Review of Neuroscience, 2017, 40, 1-19.	10.7	94
27	Early differentiation of vertebrate spinal neurons in the absence of voltage-dependent Ca2+ and Na+ influx. Developmental Biology, 1984, 106, 89-96.	2.0	93
28	Role of calcium and protein kinase C in development of the delayed rectifier potassium current in xenopus spinal neurons. Neuron, 1991, 7, 797-805.	8.1	91
29	Activity-dependent neuronal differentiation prior to synapse formation: the functions of calcium transients. Journal of Physiology (Paris), 2002, 96, 73-80.	2.1	89
30	Development of the action potential in embryo amphibian neuronsin vivo. Brain Research, 1976, 107, 610-616.	2.2	87
31	Activity-Dependent Expression of Lmx1b Regulates Specification of Serotonergic Neurons Modulating Swimming Behavior. Neuron, 2010, 67, 321-334.	8.1	84
32	Outside and in: development of neuronal excitability. Current Opinion in Neurobiology, 2002, 12, 315-323.	4.2	83
33	Embryonically Expressed GABA and Glutamate Drive Electrical Activity Regulating Neurotransmitter Specification. Journal of Neuroscience, 2008, 28, 4777-4784.	3.6	82
34	Spatial and temporal second messenger codes for growth cone turning. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13776-13781.	7.1	82
35	cJun integrates calcium activity and tlx3 expression to regulate neurotransmitter specification. Nature Neuroscience, 2010, 13, 944-950.	14.8	80
36	Differences in Number of Midbrain Dopamine Neurons Associated with Summer and Winter Photoperiods in Humans. PLoS ONE, 2016, 11, e0158847.	2.5	79

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37	Neurotransmitter Switching? No Surprise. Neuron, 2015, 86, 1131-1144.	8.1	78
38	Phenotypic checkpoints regulate neuronal development. Trends in Neurosciences, 2010, 33, 485-492.	8.6	76
39	Development of electrical excitability in embryonic neurons: Mechanisms and roles. Journal of Neurobiology, 1998, 37, 190-197.	3.6	75
40	The Challenge of Connecting the Dots in the B.R.A.I.N.. Neuron, 2013, 80, 270-274.	8.1	73
41	A critical period of transcription required for differentiation of the action potential of spinal neurons. Neuron, 1989, 2, 1055-1062.	8.1	70
42	Spontaneous Calcium Transients Regulate Myofibrillogenesis in EmbryonicXenopusMyocytes. Developmental Biology, 1996, 178, 484-497.	2.0	69
43	A Calcium Signaling Cascade Essential for Myosin Thick Filament Assembly in Xenopus Myocytes. Journal of Cell Biology, 1998, 141, 1349-1356.	5.2	68
44	Specific Frequencies of Spontaneous Ca2+ Transients Upregulate GAD 67 Transcripts in Embryonic Spinal Neurons. Molecular and Cellular Neurosciences, 2000, 16, 376-387.	2.2	66
45	Calcium dependence of differentiation of GABA immunoreactivity in spinal neurons. Journal of Comparative Neurology, 1993, 337, 168-175.	1.6	64
46	Activity-dependent competition regulates motor neuron axon pathfinding via PlexinA3. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 1524-1529.	7.1	64
47	Spontaneous calcium transients regulate neuronal plasticity in developing neurons. Journal of Neurobiology, 1995, 26, 316-324.	3.6	60
48	Temporal Regulation ofShaker- andShab-Like Potassium Channel Gene Expression in Single Embryonic Spinal Neurons during K+Current Development. Journal of Neuroscience, 1996, 16, 3287-3295.	3.6	58
49	Calcium Signaling in the Developing Xenopus Myotome. Developmental Biology, 1999, 213, 269-282.	2.0	56
50	Development of GABA Circuitry of Fast-Spiking Basket Interneurons in the Medial Prefrontal Cortex oferbb4-Mutant Mice. Journal of Neuroscience, 2013, 33, 19724-19733.	3.6	53
51	The appearance and development of chemosensitivity in Rohonâ€"Beard neurones of the Xenopus spinal cord. Journal of Physiology, 1982, 330, 513-536.	2.9	52
52	Neurotransmitter Switching Regulated by miRNAs Controls Changes in Social Preference. Neuron, 2017, 95, 1319-1333.e5.	8.1	51
53	Genetic patterns of correlation among subcortical volumes in humans: Results from a magnetic resonance imaging twin study. Human Brain Mapping, 2011, 32, 641-653.	3.6	47
54	Neuronal activity regulates neurotransmitter switching in the adult brain following light-induced stress. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5064-5071.	7.1	45

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55	Second Messenger Pas de Deux: The Coordinated Dance Between Calcium and cAMP. Science Signaling, 2006, 2006, pe22-pe22.	3.6	44
56	New dimensions of neuronal plasticity. Nature Neuroscience, 1999, 2, 489-491.	14.8	43
57	Voltageâ€•and stageâ€dependent uncoupling of Rohonâ€Beard neurones during embryonic development of Xenopus tadpoles. Journal of Physiology, 1982, 330, 145-162.	2.9	41
58	Autonomous early differentiation of neurons and muscle cells in single cell cultures. Developmental Biology, 1986, 113, 381-387.	2.0	40
59	Ca2+-Permeable AMPA Receptors and Spontaneous Presynaptic Transmitter Release at Developing Excitatory Spinal Synapses. Journal of Neuroscience, 1999, 19, 8528-8541.	3.6	40
60	Local calcium transients contribute to disappearance of pFAK, focal complex removal and deadhesion of neuronal growth cones and fibroblasts. Developmental Biology, 2005, 287, 201-212.	2.0	39
61	Non-Cell-Autonomous Mechanism of Activity-Dependent Neurotransmitter Switching. Neuron, 2014, 82, 1004-1016.	8.1	38
62	The mature electrical properties of identified neurones in grasshopper embryos. Journal of Physiology, 1981, 313, 369-384.	2.9	35
63	AMPA and NMDA Receptors Expressed by Differentiating Xenopus Spinal Neurons. Journal of Neurophysiology, 1998, 79, 2986-2998.	1.8	35
64	Reserve pool neuron transmitter respecification: Novel neuroplasticity. Developmental Neurobiology, 2012, 72, 465-474.	3.0	35
65	Homeostatic activity-dependent paradigm for neurotransmitter specification. Cell Calcium, 2005, 37, 417-423.	2.4	34
66	Exercise enhances motor skill learning by neurotransmitter switching in the adult midbrain. Nature Communications, 2020, 11, 2195.	12.8	34
67	Properties of Ectopic Neurons Induced byXenopusNeurogenin1 Misexpression. Molecular and Cellular Neurosciences, 1998, 12, 281-299.	2.2	33
68	How GABA generates depolarization. Journal of Physiology, 2010, 588, 757-758.	2.9	33
69	Contexts for Dopamine Specification by Calcium Spike Activity in the CNS. Journal of Neuroscience, 2011, 31, 78-88.	3.6	33
70	Differentiation of delayed rectifier potassium current in embryonic amphibian myocytes. Developmental Biology, 1991, 144, 119-128.	2.0	29
71	Implications of activity-dependent neurotransmitterâ€“receptor matching. Philosophical Transactions of the Royal Society B: Biological Sciences, 2008, 363, 1393-1399.	4.0	29
72	Differentiation of electrical excitability in motoneurons. Brain Research Bulletin, 2000, 53, 547-552.	3.0	28

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73	Neurite Outgrowth and In Vivo Sensory Innervation Mediated by a CaV2.2-Laminin Â2 Stop Signal. Journal of Neuroscience, 2008, 28, 2366-2374.	3.6	28
74	Development of voltage-dependent and ligand-gated channels in excitable membranes. Progress in Brain Research, 1994, 102, 169-179.	1.4	27
75	Spontaneous Calcium Spike Activity in Embryonic Spinal Neurons Is Regulated by Developmental Expression of the Na+, K+-ATPase Â3 Subunit. Journal of Neuroscience, 2009, 29, 7877-7885.	3.6	27
76	Sustained upregulation in embryonic spinal neurons of a Kv3.1 potassium channel gene encoding a delayed rectifier current. Journal of Neurobiology, 2000, 42, 347-356.	3.6	26
77	Calcium transients regulate patterned actin assembly during myofibrillogenesis. Developmental Dynamics, 2004, 229, 231-242.	1.8	24
78	Neurotransmitter phenotype plasticity: An unexpected mechanism in the toolbox of network activity homeostasis. Developmental Neurobiology, 2012, 72, 22-32.	3.0	24
79	LOW RESISTANCE CONNECTIONS BETWEEN CELLS IN THE DEVELOPING ANTHER OF THE LILY. Journal of Cell Biology, 1970, 45, 565-575.	5.2	22
80	Antisense Suppression of Potassium Channel Expression Demonstrates Its Role in Maturation of the Action Potential. Journal of Neuroscience, 2000, 20, 6087-6094.	3.6	22
81	Biological Information Processing: Bits of Progress. Science, 1997, 277, 1060-1061.	12.6	21
82	Coincidence detection enhances appropriate wiring of the nervous system. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 5311-5312.	7.1	21
83	Development of membrane properties in vertebrates. Trends in Neurosciences, 1981, 4, 169-172.	8.6	19
84	Purposeful patterns of spontaneous calcium transients in embryonic spinal neurons. Seminars in Cell and Developmental Biology, 1997, 8, 13-19.	5.0	16
85	Calcium: first messenger. Nature Neuroscience, 2008, 11, 243-244.	14.8	16
86	Decoding Neurotransmitter Switching: The Road Forward. Journal of Neuroscience, 2020, 40, 4078-4089.	3.6	16
87	IGFBP2 Plays an Essential Role in Cognitive Development during Early Life. Advanced Science, 2019, 6, 1901152.	11.2	15
88	Ultrastructural development of Rohon-Beard neurons: Loss of intramitochondrial granules parallels loss of calcium action potentials. Journal of Comparative Neurology, 1979, 183, 741-752.	1.6	14
89	Calcium regulates neuronal differentiation both directly and via co-cultured myocytes. Journal of Neurobiology, 1993, 24, 506-514.	3.6	14
90	Calcium in the function of the nervous system: New implications. Cell Calcium, 2005, 37, 371-374.	2.4	14

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91	Low pH selectively blocks calcium action potentials in amphibian neurons developing in culture. Brain Research, 1979, 161, 555-559.	2.2	13
92	We've Got NERVE: A Call to Arms for Neuroscience Education. Journal of Neuroscience, 2009, 29, 3337-3339.	3.6	12
93	Mechanism for neurotransmitter-receptor matching. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 4368-4374.	7.1	12
94	What do rohon-beard cells do?. Trends in Neurosciences, 1984, 7, 224-225.	8.6	11
95	Target-Dependent Regulation of Neurotransmitter Specification and Embryonic Neuronal Calcium Spike Activity. Journal of Neuroscience, 2010, 30, 5792-5801.	3.6	10
96	Photoperiodâ€induced neurotransmitter plasticity declines with aging: An epigenetic regulation?. Journal of Comparative Neurology, 2020, 528, 199-210.	1.6	9
97	Chapter 12 Calcium and gene expression. Progress in Brain Research, 1994, 103, 123-126.	1.4	6
98	Development of electrical excitability: Mechanisms and roles. , 1998, 37, 1-2.		6
99	A bar code for differentiation. Nature, 2009, 458, 843-844.	27.8	6
100	The Differentiation of Membrane Properties of Spinal Neurons. , 1984, , 95-106.		6
101	Brain awareness week and beyond: encouraging the next generation. Journal of Undergraduate Neuroscience Education: JUNE: A Publication of FUN, Faculty for Undergraduate Neuroscience, 2009, 8, A61-5.	0.0	6
102	A Rosetta stone for analysis of human membrane protein function. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 10641-10642.	7.1	3
103	Imaging and Manipulating Calcium Transients in Developing Xenopus Spinal Neurons. Cold Spring Harbor Protocols, 2013, 2013, pdb.prot066803.	0.3	3
104	Editorial: Dynamics of cyclic nucleotide signaling in neurons. Frontiers in Cellular Neuroscience, 2015, 9, 296.	3.7	3
105	Neuroscience Neurotransmitter-tailored dendritic trees. Science, 2015, 350, 510-511.	12.6	3
106	Development of electrical excitability in embryonic neurons: Mechanisms and roles. Journal of Neurobiology, 1998, 37, 190-197.	3.6	3
107	Coding of neuronal differentiation by calcium transients. BioEssays, 2000, 22, 811-817.	2.5	3
108	The Early Differentiation of Neuronal Membrane Properties. , 1984, , 239-250.		3

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109	Sustained upregulation in embryonic spinal neurons of a Kv3.1 potassium channel gene encoding a delayed rectifier current. Journal of Neurobiology, 2000, 42, 347.	3.6	1
110	Global and Local Regulation of Neuronal Differentiation by Calcium Transients. Lecture Notes in Physics, 0, , 67-83.	0.7	0
111	Mechanisms of Synapse Formation: Activity-Dependent Selection of Neurotransmitters and Receptors. , 2009, , 1-12.		0