Robert S Zucker

List of Publications by Citations

100 papers	13,721 citations	51 h-index	117 g-index
146 ext. papers	14,598 ext. citations	10.3 avg, IF	6.63 L-index

#	Paper	IF	Citations
100	Short-term synaptic plasticity. *Annual Review of Physiology*, **2002**, 64, 355-405	23.1	3140
99	Short-term synaptic plasticity. *Annual Review of Neuroscience*, **1989**, 12, 13-31	17	1319
98	Postsynaptic calcium is sufficient for potentiation of hippocampal synaptic transmission. *Science*, **1988**, 242, 81-4	33.3	765
97	Calcium- and activity-dependent synaptic plasticity. *Current Opinion in Neurobiology*, **1999**, 9, 305-13	7.6	498
96	Multiple calcium-dependent processes related to secretion in bovine chromaffin cells. *Neuron*, **1993**, 10, 21-30	13.9	478
95	Intracellular calcium release at fertilization in the sea urchin egg. *Developmental Biology*, **1977**, 58, 185-96	3.1	471
94	Selective induction of LTP and LTD by postsynaptic [Ca2+]i elevation. *Journal of Neurophysiology*, **1999**, 81, 781-7	3.2	403
93	Mitochondrial involvement in post-tetanic potentiation of synaptic transmission. *Neuron*, **1997**, 18, 483-91	13.9	368
92	Kinetics of the secretory response in bovine chromaffin cells following flash photolysis of caged Ca2+. *Biophysical Journal*, **1994**, 67, 2546-57	2.9	310
91	Exocytosis: a molecular and physiological perspective. *Neuron*, **1996**, 17, 1049-55	13.9	295
90	Residual Ca2+ and short-term synaptic plasticity. *Nature*, **1994**, 371, 603-6	50.4	294
89	Changes in the statistics of transmitter release during facilitation. *Journal of Physiology*, **1973**, 229, 787-810	3.9	251
88	Presynaptic calcium diffusion from various arrays of single channels. Implications for transmitter release and synaptic facilitation. *Biophysical Journal*, **1985**, 48, 1003-17	2.9	238
87	Role of presynaptic calcium ions and channels in synaptic facilitation and depression at the squid giant synapse. *Journal of Physiology*, **1982**, 323, 173-93	3.9	237
86	Temporal limits on the rise in postsynaptic calcium required for the induction of long-term potentiation. *Neuron*, **1992**, 9, 121-8	13.9	207
85	Time course of transmitter release calculated from simulations of a calcium diffusion model. *Biophysical Journal*, **1992**, 61, 671-82	2.9	207
84	Enhancement of synaptic transmission by cyclic AMP modulation of presynaptic Ih channels. *Nature Neuroscience*, **2000**, 3, 133-41	25.5	202

83	Postsynaptic levels of [Ca2+]i needed to trigger LTD and LTP. *Neuron*, **1996**, 16, 619-29	13.9	163
82	Relationship between transmitter release and presynaptic calcium influx when calcium enters through discrete channels. *Proceedings of the National Academy of Sciences of the United States of America*, **1986**, 83, 3032-6	11.5	153
81	Neuronal circuit mediating escape responses in crayfish. *Science*, **1971**, 173, 645-50	33.3	153
80	A general model of synaptic transmission and short-term plasticity. *Neuron*, **2009**, 62, 539-54	13.9	136
79	Mechanisms determining the time course of secretion in neuroendocrine cells. *Neuron*, **1996**, 16, 369-76	13.9	126
78	Mechanism of transmitter release: voltage hypothesis and calcium hypothesis. *Science*, **1986**, 231, 574-9	33.3	113
77	Control of cytoplasmic calcium with photolabile tetracarboxylate 2-nitrobenzhydrol chelators. *Biophysical Journal*, **1986**, 50, 843-53	2.9	111
76	Aequorin response facilitation and intracellular calcium accumulation in molluscan neurones. *Journal of Physiology*, **1980**, 300, 167-96	3.9	105
75	Calcium-dependent inward current in Aplysia bursting pace-maker neurones. *Journal of Physiology*, **1985**, 362, 107-30	3.9	103
74	Action potentials must admit calcium to evoke transmitter release. *Nature*, **1991**, 350, 153-5	50.4	98
73	cAMP acts on exchange protein activated by cAMP/cAMP-regulated guanine nucleotide exchange protein to regulate transmitter release at the crayfish neuromuscular junction. *Journal of Neuroscience*, **2005**, 25, 208-14	6.6	94
72	Release of LHRH is linearly related to the time integral of presynaptic Ca2+ elevation above a threshold level in bullfrog sympathetic ganglia. *Neuron*, **1993**, 10, 465-73	13.9	93
71	Characteristics of crayfish neuromuscular facilitation and their calcium dependence. *Journal of Physiology*, **1974**, 241, 91-110	3.9	90
70	Regulation of synaptic vesicle recycling by calcium and serotonin. *Neuron*, **1998**, 21, 155-67	13.9	89
69	Intracellular calcium release and the mechanisms of parthenogenetic activation of the sea urchin egg. *Developmental Biology*, **1978**, 65, 285-95	3.1	89
68	Modulation of M-current by intracellular Ca2+. *Neuron*, **1991**, 6, 533-45	13.9	88
67	Facilitation through buffer saturation: constraints on endogenous buffering properties. *Biophysical Journal*, **2004**, 86, 2691-709	2.9	83
66	Effects of mobile buffers on facilitation: experimental and computational studies. *Biophysical Journal*, **2000**, 78, 2735-51	2.9	83

65	Calcium-induced inactivation of calcium current causes the inter-burst hyperpolarization of Aplysia bursting neurones. *Journal of Physiology*, **1985**, 362, 131-60	3.9	83
64	Induction of filopodia by direct local elevation of intracellular calcium ion concentration. *Journal of Cell Biology*, **1999**, 145, 1265-75	7.3	82
63	Phosphorylation and local presynaptic protein synthesis in calcium- and calcineurin-dependent induction of crayfish long-term facilitation. *Neuron*, **2001**, 32, 489-501	13.9	81
62	The calcium concentration clamp: spikes and reversible pulses using the photolabile chelator DM-nitrophen. *Cell Calcium*, **1993**, 14, 87-100	4	80
61	Calcium released by photolysis of DM-nitrophen stimulates transmitter release at squid giant synapse. *Journal of Physiology*, **1990**, 426, 473-98	3.9	77
60	Presynaptic calcium in transmitter release and posttetanic potentiation. *Annals of the New York Academy of Sciences*, **1991**, 635, 191-207	6.5	77
59	Crayfish neuromuscular facilitation activated by constant presynaptic action potentials and depolarizing pulses. *Journal of Physiology*, **1974**, 241, 69-89	3.9	76
58	Photolytic manipulation of Ca2+ and the time course of slow, Ca(2+)-activated K+ current in rat hippocampal neurones. *Journal of Physiology*, **1994**, 475, 229-39	3.9	73
57	Ca2+ cooperativity in neurosecretion measured using photolabile Ca2+ chelators. *Journal of Neurophysiology*, **1994**, 72, 825-30	3.2	72
56	New and corrected simulations of synaptic facilitation. *Biophysical Journal*, **2002**, 83, 1368-73	2.9	70
55	Membrane potential has no direct role in evoking neurotransmitter release. *Nature*, **1988**, 335, 360-2	50.4	69
54	Roles for mitochondrial and reverse mode Na+/Ca2+ exchange and the plasmalemma Ca2+ ATPase in post-tetanic potentiation at crayfish neuromuscular junctions. *Journal of Neuroscience*, **2001**, 21, 9598-607	6.6	68
53	Post-tetanic decay of evoked and spontaneous transmitter release and a residual-calcium model of synaptic facilitation at crayfish neuromuscular junctions. *Journal of General Physiology*, **1983**, 81, 355-72	3.4	67
52	Calcium sensitivity of neurotransmitter release differs at phasic and tonic synapses. *Journal of Neuroscience*, **2005**, 25, 3113-25	6.6	60
51	Temporal synaptic tagging by I(h) activation and actin: involvement in long-term facilitation and cAMP-induced synaptic enhancement. *Neuron*, **2002**, 33, 601-13	13.9	60
50	Effects of photolabile calcium chelators on fluorescent calcium indicators. *Cell Calcium*, **1992**, 13, 29-40	4	53
49	"Caged calcium" in Aplysia pacemaker neurons. Characterization of calcium-activated potassium and nonspecific cation currents. *Journal of General Physiology*, **1989**, 93, 1017-60	3.4	48
48	Tetraethylammonium contains an impurity which alkalizes cytoplasm and reduce calcium buffering in neurons. *Brain Research*, **1981**, 208, 473-8	3.7	46

47	Excitability changes in crayfish motor neurone terminals. *Journal of Physiology*, **1974**, 241, 111-26	3.9	46
46	Spread of synaptic depression mediated by presynaptic cytoplasmic signaling. *Science*, **1996**, 272, 998-1001	33.3	45
45	Long-lasting depression and the depletion hypothesis at crayfish neuromuscular junctions. *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology*, **1977**, 121, 223-240	2.3	44
44	Photolysis-induced suppression of inhibition in rat hippocampal CA1 pyramidal neurons. *Journal of Physiology*, **2001**, 533, 757-63	3.9	40
43	Long-lasting potentiation and depression without presynaptic activity. *Journal of Neurophysiology*, **1996**, 75, 2157-60	3.2	38
42	Postsynaptic elevation of calcium induces persistent depression of developing neuromuscular synapses. *Neuron*, **1996**, 16, 745-54	13.9	37
41	Theoretical implications of the size principle of motoneurone recruitment. *Journal of Theoretical Biology*, **1973**, 38, 587-96	2.3	35
40	Presynaptic effectors contributing to cAMP-induced synaptic potentiation in Drosophila. *Journal of Neurobiology*, **2006**, 66, 273-80		34
39	Is synaptic facilitation caused by presynaptic spike broadening?. *Nature*, **1979**, 278, 57-9	50.4	29
38	Calcium released by photolysis of DM-nitrophen triggers transmitter release at the crayfish neuromuscular junction. *Journal of Physiology*, **1993**, 462, 243-60	3.9	28
37	Photorelease techniques for raising or lowering intracellular Ca2+. *Methods in Cell Biology*, **1994**, 40, 31-63	1.8	27
36	Minis: whence and wherefore?. *Neuron*, **2005**, 45, 482-4	13.9	26
35	Ca(2+)-dependent inactivation of Ca2+ current in Aplysia neurons: kinetic studies using photolabile Ca2+ chelators. *Journal of Physiology*, **1993**, 464, 501-28	3.9	26
34	Dance of the SNAREs: assembly and rearrangements detected with FRET at neuronal synapses. *Journal of Neuroscience*, **2013**, 33, 5507-23	6.6	25
33	Presynaptic target of Ca2+ action on neuropeptide and acetylcholine release in Aplysia californica. *Journal of Physiology*, **2001**, 535, 647-62	3.9	25
32	Asymmetrically Positioned Flagellar Control Units Regulate Human Sperm Rotation. *Cell Reports*, **2018**, 24, 2606-2613	10.6	25
31	Photolysis of postsynaptic caged Ca2+ can potentiate and depress mossy fiber synaptic responses in rat hippocampal CA3 pyramidal neurons. *Journal of Neurophysiology*, **2004**, 91, 1596-607	3.2	23
30	Calcium and transmitter release at nerve terminals. *Biochemical Society Transactions*, **1993**, 21, 395-401	5.1	23

29	Field potentials generated by dendritic spikes and synaptic potentials. *Science*, **1969**, 165, 409-13	33.3	21
28	Roles of Ca2+, hyperpolarization and cyclic nucleotide-activated channel activation, and actin in temporal synaptic tagging. *Journal of Neuroscience*, **2004**, 24, 4205-12	6.6	19
27	Calcium and Short-Term Synaptic Plasticity. *Animal Biology*, **1993**, 44, 495-512		17
26	Calcium influx through HCN channels does not contribute to cAMP-enhanced transmission. *Journal of Neurophysiology*, **2004**, 92, 644-7	3.2	16
25	Calcium activation of the cortical reaction in sea urchin eggs. *Nature*, **1979**, 279, 820-1	50.4	15
24	Cytoplasmic alkalization reduces calcium buffering in molluscan central neurons. *Brain Research*, **1981**, 225, 155-70	3.7	15
23	NCS-1 stirs somnolent synapses. *Nature Neuroscience*, **2003**, 6, 1006-8	25.5	13
22	Activity-dependent potentiation of synaptic transmission from L30 inhibitory interneurons of aplysia depends on residual presynaptic Ca2+ but not on postsynaptic Ca2+. *Journal of Neurophysiology*, **1997**, 78, 2061-71	3.2	12
21	Magnesium binding to DM-nitrophen and its effect on the photorelease of calcium. *Biophysical Journal*, **1999**, 77, 3384-93	2.9	12
20	The calcium hypothesis and modulation of transmitter release by hyperpolarizing pulses. *Biophysical Journal*, **1987**, 52, 347-50	2.9	12
19	Can a synaptic signal arise from noise?. *Neuron*, **2003**, 38, 845-6	13.9	10
18	Increased Ca2+ influx through Na+/Ca2+ exchanger during long-term facilitation at crayfish neuromuscular junctions. *Journal of Physiology*, **2007**, 585, 413-27	3.9	9
17	Effect of TEA on light emission from aequorin-injected aplysia central neurons. *Brain Research*, **1979**, 169, 91-102	3.7	9
16	Synaptic Plasticity at Crayfish Neuromuscular Junctions **1977**, 49-65		9
15	A peer review how-to. *Science*, **2008**, 319, 32	33.3	8
14	Monensin can transport calcium across cell membranes in a sodium independent fashion in the crayfish Procambarus clarkii. *Neuroscience Letters*, **1992**, 143, 115-8	3.3	7
13	Cobalt blocks the decrease in MEPSP frequency on depolarization in calcium-free hypertonic media. *Journal of Neurobiology*, **1986**, 17, 707-12		7
12	Processes Underlying One Form of Synaptic Plasticity: Facilitation. *Advances in Behavioral Biology*, **1982**, 249-264		7

List of Publications

11	Release of Neurotransmitters **2004**, 197-244		5
10	Release of Neurotransmitters **2014**, 443-488		4
9	Frequency Dependent Changes in Excitatory Synaptic Efficacy **1988**, 153-167		4
8	Photorelease techniques for raising or lowering intracellular Ca(2+). *Methods in Cell Biology*, **2010**, 99, 27-66	1.8	3
7	Increased Ca2+ buffering enhances Ca2+-dependent process. *Journal of Physiology*, **2001**, 531, 583	3.9	3
6	Stray light correction for microspectrophotometric determination of intracellular ion concentration. *Journal of Neuroscience Methods*, **1982**, 5, 389-94	3	3
5	Synaptic Facilitation and Residual Calcium **1985**, 461-475		3
4	Command neurons: a more precise definition reveals gaps in our evidence and limits to our models. *Behavioral and Brain Sciences*, **1978**, 1, 35-36	0.9	2
3	The joint peristimulus-time scatter diagram is an index of the operational significance of a synapse. *Brain Research*, **1973**, 53, 458-64	3.7	2
2	Synaptic Plasticity **2014**, 533-561		1
1	Models of Calcium Regulation in Neurons **1989**, 403-422		1