Mark F Bear

List of Publications by Year
in descending order

129 papers	31,110 citations	11639 70 h-index	16636 123 g-index
138 all docs	138 docs citations	138 times ranked	20371 citing authors

#	Article	IF	Citations
1	LTP and LTD. Neuron, 2004, 44, 5-21.	3.8	3,364
2	Learning Induces Long-Term Potentiation in the Hippocampus. Science, 2006, 313, 1093-1097.	6.0	1,638
3	The mGluR theory of fragile X mental retardation. Trends in Neurosciences, 2004, 27, 370-377.	4.2	1,431
4	Metaplasticity: the plasticity of synaptic plasticity. Trends in Neurosciences, 1996, 19, 126-130.	4.2	1,415
5	Altered synaptic plasticity in a mouse model of fragile X mental retardation. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 7746-7750.	3.3	1,208
6	BDNF Regulates the Maturation of Inhibition and the Critical Period of Plasticity in Mouse Visual Cortex. Cell, 1999, 98, 739-755.	13.5	1,072
7	Regulation of distinct AMPA receptor phosphorylation sites during bidirectional synaptic plasticity. Nature, 2000, 405, 955-959.	13.7	996
8	Correction of Fragile X Syndrome in Mice. Neuron, 2007, 56, 955-962.	3.8	895
9	Role for Rapid Dendritic Protein Synthesis in Hippocampal mGluR-Dependent Long-Term Depression. Science, 2000, 288, 1254-1256.	6.0	835
10	Synaptic Dysfunction in Neurodevelopmental Disorders Associated with Autism and Intellectual Disabilities. Cold Spring Harbor Perspectives in Biology, 2012, 4, a009886-a009886.	2.3	650
11	NMDA Induces Long-Term Synaptic Depression and Dephosphorylation of the GluR1 Subunit of AMPA Receptors in Hippocampus. Neuron, 1998, 21, 1151-1162.	3.8	617
12	Reward Timing in the Primary Visual Cortex. Science, 2006, 311, 1606-1609.	6.0	598
13	Long-Term Depression in Hippocampus. Annual Review of Neuroscience, 1996, 19, 437-462.	5.0	580
14	Experience-dependent modification of synaptic plasticity in visual cortex. Nature, 1996, 381, 526-528.	13.7	567
15	Mutations causing syndromic autism define an axis of synaptic pathophysiology. Nature, 2011, 480, 63-68.	13.7	546
16	Rapid, experience-dependent expression of synaptic NMDA receptors in visual cortex in vivo. Nature Neuroscience, 1999, 2, 352-357.	7.1	519
17	The Autistic Neuron: Troubled Translation?. Cell, 2008, 135, 401-406.	13.5	517
18	Internalization of ionotropic glutamate receptors in response to mGluR activation. Nature Neuroscience, 2001, 4, 1079-1085.	7.1	492

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19	Forebrain-Specific Calcineurin Knockout Selectively Impairs Bidirectional Synaptic Plasticity and Working/Episodic-like Memory. Cell, 2001, 107, 617-629.	13.5	457
20	Chronic Pharmacological mGlu5 Inhibition Corrects Fragile X in Adult Mice. Neuron, 2012, 74, 49-56.	3.8	437
21	New views of Arc, a master regulator of synaptic plasticity. Nature Neuroscience, 2011, 14, 279-284.	7.1	430
22	NMDA Receptor-Dependent Ocular Dominance Plasticity in Adult Visual Cortex. Neuron, 2003, 38, 977-985.	3.8	422
23	Co-regulation of long-term potentiation and experience-dependent synaptic plasticity in visual cortex by age and experience. Nature, 1995, 375, 328-331.	13.7	410
24	Visual Experience and Deprivation Bidirectionally Modify the Composition and Function of NMDA Receptors in Visual Cortex. Neuron, 2001, 29, 157-169.	3.8	360
25	How Monocular Deprivation Shifts Ocular Dominance in Visual Cortex of Young Mice. Neuron, 2004, 44, 917-923.	3.8	349
26	Chemical Induction of mGluR5- and Protein Synthesisâ€"Dependent Long-Term Depression in Hippocampal Area CA1. Journal of Neurophysiology, 2001, 86, 321-325.	0.9	342
27	The Pathophysiology of Fragile X (and What It Teaches Us about Synapses). Annual Review of Neuroscience, 2012, 35, 417-443.	5.0	342
28	Hypersensitivity to mGluR5 and ERK1/2 Leads to Excessive Protein Synthesis in the Hippocampus of a Mouse Model of Fragile X Syndrome. Journal of Neuroscience, 2010, 30, 15616-15627.	1.7	336
29	Smaller Dendritic Spines, Weaker Synaptic Transmission, but Enhanced Spatial Learning in Mice Lacking Shank1. Journal of Neuroscience, 2008, 28, 1697-1708.	1.7	321
30	The BCM theory of synapse modification at 30: interaction of theory with experiment. Nature Reviews Neuroscience, 2012, 13, 798-810.	4.9	314
31	Molecular mechanism for loss of visual cortical responsiveness following brief monocular deprivation. Nature Neuroscience, 2003, 6, 854-862.	7.1	301
32	Effects of STX209 (Arbaclofen) on Neurobehavioral Function in Children and Adults with Fragile X Syndrome: A Randomized, Controlled, Phase 2 Trial. Science Translational Medicine, 2012, 4, 152ra127.	5.8	289
33	Instructive Effect of Visual Experience in Mouse Visual Cortex. Neuron, 2006, 51, 339-349.	3.8	263
34	Drug development for neurodevelopmental disorders: lessons learned from fragile X syndrome. Nature Reviews Drug Discovery, 2018, 17, 280-299.	21.5	247
35	Role for metabotropic glutamate receptor 5 (mGluR5) in the pathogenesis of fragile X syndrome. Journal of Physiology, 2008, 586, 1503-1508.	1.3	244
36	Toward Fulfilling the Promise of Molecular Medicine in Fragile X Syndrome. Annual Review of Medicine, 2011, 62, 411-429.	5.0	244

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37	Extracellular Signal-Regulated Protein Kinase Activation Is Required for Metabotropic Glutamate Receptor-Dependent Long-Term Depression in Hippocampal Area CA1. Journal of Neuroscience, 2004, 24, 4859-4864.	1.7	228
38	Bidirectional synaptic plasticity: from theory to reality. Philosophical Transactions of the Royal Society B: Biological Sciences, 2003, 358, 649-655.	1.8	222
39	Monocular deprivation induces homosynaptic long-term depression in visual cortex. Nature, 1999, 397, 347-350.	13.7	219
40	Reversal of Disease-Related Pathologies in the Fragile X Mouse Model by Selective Activation of GABA _B Receptors with Arbaclofen. Science Translational Medicine, 2012, 4, 152ra128.	5.8	217
41	Visual Experience Induces Long-Term Potentiation in the Primary Visual Cortex. Journal of Neuroscience, 2010, 30, 16304-16313.	1.7	214
42	PLC-Î²1, activated via mGluRs, mediates activity-dependent differentiation in cerebral cortex. Nature Neuroscience, 2001, 4, 282-288.	7.1	210
43	Lovastatin Corrects Excess Protein Synthesis and Prevents Epileptogenesis in a Mouse Model of Fragile X Syndrome. Neuron, 2013, 77, 243-250.	3.8	206
44	Fragile X mental retardation protein and synaptic plasticity. Molecular Brain, 2013, 6, 15.	1.3	189
45	Learned spatiotemporal sequence recognition and prediction in primary visual cortex. Nature Neuroscience, 2014, 17, 732-737.	7.1	185
46	A Cholinergic Mechanism for Reward Timing within Primary Visual Cortex. Neuron, 2013, 77, 723-735.	3.8	174
47	Bidirectional modification of CA1 synapses in the adult hippocampus in vivo. Nature, 1996, 381, 163-166.	13.7	170
48	Obligatory Role of NR2A for Metaplasticity in Visual Cortex. Neuron, 2007, 53, 495-502.	3.8	169
49	Bidirectional synaptic mechanisms of ocular dominance plasticity in visual cortex. Philosophical Transactions of the Royal Society B: Biological Sciences, 2009, 364, 357-367.	1.8	169
50	Evidence for Altered NMDA Receptor Function as a Basis for Metaplasticity in Visual Cortex. Journal of Neuroscience, 2003, 23, 5583-5588.	1.7	162
51	Deprivation-induced synaptic depression by distinct mechanisms in different layers of mouse visual cortex. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 1383-1388.	3.3	145
52	Cognitive dysfunction and prefrontal synaptic abnormalities in a mouse model of fragile X syndrome. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2587-2592.	3.3	143
53	Loss of Arc renders the visual cortex impervious to the effects of sensory experience or deprivation. Nature Neuroscience, 2010, 13, 450-457.	7.1	142
54	Arbaclofen in fragile X syndrome: results of phase 3 trials. Journal of Neurodevelopmental Disorders, 2017, 9, 3.	1.5	135

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55	A Morphological Correlate of Synaptic Scaling in Visual Cortex. Journal of Neuroscience, 2004, 24, 6928-6938.	1.7	131
56	Visual recognition memory, manifested as long-term habituation, requires synaptic plasticity in V1. Nature Neuroscience, 2015, 18, 262-271.	7.1	126
57	A molecular correlate of memory and amnesia in the hippocampus. Nature Neuroscience, 1999, 2, 309-310.	7.1	125
58	Mechanism-based approaches to treating fragile X. , 2010, 127, 78-93.		121
59	STX209 (Arbaclofen) for Autism Spectrum Disorders: An 8-Week Open-Label Study. Journal of Autism and Developmental Disorders, 2014, 44, 958-964.	1.7	111
60	Role for A Kinase-anchoring Proteins (AKAPS) in Glutamate Receptor Trafficking and Long Term Synaptic Depression. Journal of Biological Chemistry, 2005, 280, 16962-16968.	1.6	107
61	Molecular basis for induction of ocular dominance plasticity. , 1999, 41, 83-91.		102
62	How the mechanisms of long-term synaptic potentiation and depression serve experience-dependent plasticity in primary visual cortex. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130284.	1.8	101
63	Pharmacological reversal of synaptic plasticity deficits in the mouse model of Fragile X syndrome by group II mGluR antagonist or lithium treatment. Brain Research, 2011, 1380, 106-119.	1.1	98
64	The ratio of NR2A/B NMDA receptor subunits determines the qualities of ocular dominance plasticity in visual cortex. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 5377-5382.	3.3	96
65	Essential role for a long-term depression mechanism in ocular dominance plasticity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9860-9865.	3.3	95
66	Cannabinoid Receptor Blockade Reveals Parallel Plasticity Mechanisms in Different Layers of Mouse Visual Cortex. Neuron, 2008, 58, 340-345.	3.8	94
67	Fragile X: Translation in Action. Neuropsychopharmacology, 2008, 33, 84-87.	2.8	94
68	Contribution of mGluR5 to pathophysiology in a mouse model of human chromosome 16p11.2 microdeletion. Nature Neuroscience, 2015, 18, 182-184.	7.1	94
69	Activity-dependent regulation of NR2B translation contributes to metaplasticity in mouse visual cortex. Neuropharmacology, 2007, 52, 200-214.	2.0	92
70	Conserved hippocampal cellular pathophysiology but distinct behavioural deficits in a new rat model of FXS. Human Molecular Genetics, 2015, 24, 5977-5984.	1.4	92
71	Rapid Structural Remodeling of Thalamocortical Synapses Parallels Experience-Dependent Functional Plasticity in Mouse Primary Visual Cortex. Journal of Neuroscience, 2010, 30, 9670-9682.	1.7	82
72	Convergence of Hippocampal Pathophysiology in<i>Syngap</i>^{+/âˆ’}and<i>Fmr1</i>^{âˆ’/<i>y</i>}Mice. Journal of Neuroscience, 2015, 35, 15073-15081.	1.7	76

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73	Effects of the Metabotropic Glutamate Receptor Antagonist MCPG on Phosphoinositide Turnover and Synaptic Plasticity in Visual Cortex. Journal of Neuroscience, 1998, 18, 1-9.	1.7	75
74	R-Baclofen Reverses Cognitive Deficits and Improves Social Interactions in Two Lines of 16p11.2 Deletion Mice. Neuropsychopharmacology, 2018, 43, 513-524.	2.8	75
75	Thalamic activity that drives visual cortical plasticity. Nature Neuroscience, 2009, 12, 390-392.	7.1	73
76	Stimulus-Selective Response Plasticity in the Visual Cortex: An Assay for the Assessment of Pathophysiology and Treatment of Cognitive Impairment Associated with Psychiatric Disorders. Biological Psychiatry, 2012, 71, 487-495.	0.7	73
77	Learning reward timing in cortex through reward dependent expression of synaptic plasticity. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 6826-6831.	3.3	70
78	The effects of l-amphetamine sulfate on cognition in MS patients: results of a randomized controlled trial. Journal of Neurology, 2009, 256, 1095-1102.	1.8	67
79	Relative Contribution of Feedforward Excitatory Connections to Expression of Ocular Dominance Plasticity in Layer 4 of Visual Cortex. Neuron, 2010, 66, 493-500.	3.8	67
80	Contrasting roles for parvalbumin-expressing inhibitory neurons in two forms of adult visual cortical plasticity. ELife, 2016, 5, .	2.8	63
81	Î²-Arrestin2 Couples Metabotropic Glutamate Receptor 5 to Neuronal Protein Synthesis and Is a Potential Target to Treat Fragile X. Cell Reports, 2017, 18, 2807-2814.	2.9	60
82	Microglia enable mature perineuronal nets disassembly upon anesthetic ketamine exposure or 60-Hz light entrainment in the healthy brain. Cell Reports, 2021, 36, 109313.	2.9	58
83	Loss of the Fragile X Mental Retardation Protein Decouples Metabotropic Glutamate Receptor Dependent Priming of Long-Term Potentiation From Protein Synthesis. Journal of Neurophysiology, 2010, 104, 1047-1051.	0.9	57
84	Sustained correction of associative learning deficits after brief, early treatment in a rat model of Fragile X Syndrome. Science Translational Medicine, 2019, 11, .	5.8	57
85	Group I Metabotropic Glutamate Receptors: A Role in Neurodevelopmental Disorders?. Molecular Neurobiology, 2007, 35, 298-307.	1.9	53
86	Rapid recovery from the effects of early monocular deprivation is enabled by temporary inactivation of the retinas. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14139-14144.	3.3	52
87	Bidirectional Modifications of Visual Acuity Induced by Monocular Deprivation in Juvenile and Adult Rats. Journal of Neuroscience, 2006, 26, 7368-7374.	1.7	50
88	Is metabotropic glutamate receptor 5 upregulated in prefrontal cortex in fragile X syndrome?. Molecular Autism, 2013, 4, 15.	2.6	50
89	Experience-Dependent Synaptic Plasticity in V1 Occurs without Microglial CX3CR1. Journal of Neuroscience, 2017, 37, 10541-10553.	1.7	45
90	Selective inhibition of glycogen synthase kinase 3Î± corrects pathophysiology in a mouse model of fragile X syndrome. Science Translational Medicine, 2020, 12, .	5.8	42

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91	Negative Allosteric Modulation of mGluR5 Partially Corrects Pathophysiology in a Mouse Model of Rett Syndrome. Journal of Neuroscience, 2016, 36, 11946-11958.	1.7	41
92	Arc restores juvenile plasticity in adult mouse visual cortex. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 9182-9187.	3.3	40
93	Fragile x syndrome and autism: from disease model to therapeutic targets. Journal of Neurodevelopmental Disorders, 2009, 1, 133-140.	1.5	39
94	Higher brain functions served by the lowly rodent primary visual cortex. Learning and Memory, 2014, 21, 527-533.	0.5	39
95	Spatial Multiplexing of Fluorescent Reporters for Imaging Signaling Network Dynamics. Cell, 2020, 183, 1682-1698.e24.	13.5	38
96	Courting a Cure for Fragile X. Neuron, 2005, 45, 642-644.	3.8	35
97	Stimulation of Phosphoinositide Turnover by Excitatory Amino Acids.. Annals of the New York Academy of Sciences, 1991, 627, 42-56.	1.8	34
98	Dissociation of functional and structural plasticity of dendritic spines during NMDAR and mGluR-dependent long-term synaptic depression in wild-type and fragile X model mice. Molecular Psychiatry, 2021, 26, 4652-4669.	4.1	34
99	Induction of NMDA Receptor-Dependent Long-Term Depression in Visual Cortex Does Not Require Metabotropic Glutamate Receptors. Journal of Neurophysiology, 1999, 82, 3594-3597.	0.9	31
100	Visual recognition memory: a view from V1. Current Opinion in Neurobiology, 2015, 35, 57-65.	2.0	29
101	Recovery from the anatomical effects of longâ€term monocular deprivation in cat lateral geniculate nucleus. Journal of Comparative Neurology, 2018, 526, 310-323.	0.9	26
102	The mouse as a model for neuropsychiatric drug development. Current Biology, 2018, 28, R909-R914.	1.8	26
103	The spatiotemporal organization of experience dictates hippocampal involvement in primary visual cortical plasticity. Current Biology, 2021, 31, 3996-4008.e6.	1.8	26
104	Distinct Laminar Requirements for NMDA Receptors in Experience-Dependent Visual Cortical Plasticity. Cerebral Cortex, 2020, 30, 2555-2572.	1.6	25
105	Visual Recognition Is Heralded by Shifts in Local Field Potential Oscillations and Inhibitory Networks in Primary Visual Cortex. Journal of Neuroscience, 2021, 41, 6257-6272.	1.7	24
106	Stimulus for Rapid Ocular Dominance Plasticity in Visual Cortex. Journal of Neurophysiology, 2006, 95, 2947-2950.	0.9	23
107	Recovery From Monocular Deprivation Using Binocular Deprivation. Journal of Neurophysiology, 2008, 100, 2217-2224.	0.9	23
108	The levo enantiomer of amphetamine increases memory consolidation and gene expression in the hippocampus without producing locomotor stimulation. Neurobiology of Learning and Memory, 2009, 92, 106-113.	1.0	23

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109	Interneuron Simplification and Loss of Structural Plasticity As Markers of Aging-Related Functional Decline. Journal of Neuroscience, 2018, 38, 8421-8432.	1.7	23
110	Promoting neurological recovery of function via metaplasticity. Future Neurology, 2010, 5, 21-26.	0.9	21
111	Metabotropic glutamate receptor signaling is required for NMDA receptor-dependent ocular dominance plasticity and LTD in visual cortex. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12852-12857.	3.3	21
112	Bidirectional ocular dominance plasticity of inhibitory networks: recent advances and unresolved questions. Frontiers in Cellular Neuroscience, 2010, 4, 21.	1.8	20
113	Opposing Somatic and Dendritic Expression of Stimulus-Selective Response Plasticity in Mouse Primary Visual Cortex. Frontiers in Cellular Neuroscience, 2019, 13, 555.	1.8	19
114	How do memories leave their mark?. Nature, 1997, 385, 481-482.	13.7	18
115	Divergent dysregulation of gene expression in murine models of fragile X syndrome and tuberous sclerosis. Molecular Autism, 2014, 5, 16.	2.6	18
116	Gene expression analysis in Fmr1KO mice identifies an immunological signature in brain tissue and mGluR5-related signaling in primary neuronal cultures. Molecular Autism, 2015, 6, 66.	2.6	18
117	mGluR5 Negative Modulators for Fragile X: Treatment Resistance and Persistence. Frontiers in Psychiatry, 2021, 12, 718953.	1.3	17
118	Microchip amplifier for in vitro, in vivo, and automated whole cell patch-clamp recording. Journal of Neurophysiology, 2015, 113, 1275-1282.	0.9	16
119	Activation of mGluR5 Induces Rapid and Long-Lasting Protein Kinase D Phosphorylation in Hippocampal Neurons. Journal of Molecular Neuroscience, 2010, 42, 1-8.	1.1	14
120	Correction of amblyopia in cats and mice after the critical period. ELife, 2021, 10, .	2.8	14
121	Stimulus-Selective Response Plasticity in Primary Visual Cortex: Progress and Puzzles. Frontiers in Neural Circuits, 2021, 15, 815554.	1.4	14
122	The Immediate Early Gene Arc Is Not Required for Hippocampal Long-Term Potentiation. Journal of Neuroscience, 2021, 41, 4202-4211.	1.7	13
123	Lifting the Mood on Treating Fragile X. Biological Psychiatry, 2012, 72, 895-897.	0.7	7
124	The mGluR Theory of Fragile X: From Mice to Men. , 2017, , 173-204.		4
125	Partial Recovery of Amblyopia After Fellow Eye Ischemic Optic Neuropathy. Journal of Neuro-Ophthalmology, 2023, 43, 76-81.	0.4	4
126	The Spatiotemporal Organization of Experience Dictates Hippocampal Involvement in Primary Visual Cortical Plasticity. SSRN Electronic Journal, 0, , .	0.4	1

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127	Plasticity and Memory in Cerebral Cortex. , 2017, , 233-262.		0
128	Die Entstehung neuronaler Schaltkreise. , 2018, , 849-892.		0
129	Dynamic Changes in the Bridging Collaterals of the Basal Ganglia Circuitry Control Stress-Related Behaviors in Mice. Molecules and Cells, 2020, 43, 360-372.	1.0	0