Tobias Bonhoeffer

List of Publications by Year
in descending order

118	22,653	12303 69	18606 119
papers	citations	h-index	g-index

131	131	131	17430
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dendritic spine changes associated with hippocampal long-term synaptic plasticity. Nature, 1999, 399, 66-70.	13.7	1,556
2	Hippocampal long-term potentiation is impaired in mice lacking brain-derived neurotrophic factor.. Proceedings of the National Academy of Sciences of the United States of America, 1995, 92, 8856-8860.	3.3	1,322
3	Morphological Changes in Dendritic Spines Associated with Long-Term Synaptic Plasticity. Annual Review of Neuroscience, 2001, 24, 1071-1089.	5.0	1,095
4	Long-term, high-resolution imaging in the mouse neocortex through a chronic cranial window. Nature Protocols, 2009, 4, 1128-1144.	5.5	894
5	Iso-orientation domains in cat visual cortex are arranged in pinwheel-like patterns. Nature, 1991, 353, 429-431.	13.7	798
6	Essential Role for TrkB Receptors in Hippocampus-Mediated Learning. Neuron, 1999, 24, 401-414.	3.8	731
7	Sensorimotor Mismatch Signals in Primary Visual Cortex of the Behaving Mouse. Neuron, 2012, 74, 809-815.	3.8	572
8	Genesis of dendritic spines: insights from ultrastructural and imaging studies. Nature Reviews Neuroscience, 2004, 5, 24-34.	4.9	545
9	Bidirectional Activity-Dependent Morphological Plasticity in Hippocampal Neurons. Neuron, 2004, 44, 759-767.	3.8	517
10	Experience leaves a lasting structural trace in cortical circuits. Nature, 2009, 457, 313-317.	13.7	462
11	A genetically encoded calcium indicator for chronic in vivo two-photon imaging. Nature Methods, 2008, 5, 805-811.	9.0	458
12	Mechanism of TrkB-Mediated Hippocampal Long-Term Potentiation. Neuron, 2002, 36, 121-137.	3.8	434
13	Tuning and Topography in an Odor Map on the Rat Olfactory Bulb. Journal of Neuroscience, 2001, 21, 1351-1360.	1.7	365
14	Live-cell imaging of dendritic spines by STED microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 18982-18987.	3.3	364
15	Virus-mediated gene transfer into hippocampal CA1 region restores long-term potentiation in brain-derived neurotrophic factor mutant mice.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 12547-12552.	3.3	353
16	Balance and Stability of Synaptic Structures during Synaptic Plasticity. Neuron, 2014, 82, 430-443.	3.8	349
17	Spine Motility. Neuron, 2002, 35, 1019-1027.	3.8	317
18	Spatial Relationships among Three Columnar Systems in Cat Area 17. Journal of Neuroscience, 1997, 17, 9270-9284.	1.7	309

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19	Development of Orientation Preference Maps in Ferret Primary Visual Cortex. Journal of Neuroscience, 1996, 16, 6443-6453.	1.7	307
20	Synaptic Scaling and Homeostatic Plasticity in the Mouse Visual Cortex InÂVivo. Neuron, 2013, 80, 327-334.	3.8	301
21	Neurotrophins and activity-dependent development of the neocortex. Current Opinion in Neurobiology, 1996, 6, 119-126.	2.0	298
22	Homeostatic Regulation of Eye-Specific Responses in Visual Cortex during Ocular Dominance Plasticity. Neuron, 2007, 54, 961-972.	3.8	298
23	Highly ordered arrangement of single neurons in orientation pinwheels. Nature, 2006, 442, 925-928.	13.7	293
24	Kinase-Independent Requirement of EphB2 Receptors in Hippocampal Synaptic Plasticity. Neuron, 2001, 32, 1027-1040.	3.8	285
25	What is memory? The present state of the engram. BMC Biology, 2016, 14, 40.	1.7	277
26	Massive restructuring of neuronal circuits during functional reorganization of adult visual cortex. Nature Neuroscience, 2008, 11, 1162-1167.	7.1	275
27	A Balance of Protein Synthesis and Proteasome-Dependent Degradation Determines the Maintenance of LTP. Neuron, 2006, 52, 239-245.	3.8	272
28	Synaptopodin-deficient mice lack a spine apparatus and show deficits in synaptic plasticity. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 10494-10499.	3.3	265
29	The p75 Neurotrophin Receptor Negatively Modulates Dendrite Complexity and Spine Density in Hippocampal Neurons. Journal of Neuroscience, 2005, 25, 9989-9999.	1.7	251
30	Live imaging of effector cell trafficking and autoantigen recognition within the unfolding autoimmune encephalomyelitis lesion. Journal of Experimental Medicine, 2005, 201, 1805-1814.	4.2	249
31	Grid cells and cortical representation. Nature Reviews Neuroscience, 2014, 15, 466-481.	4.9	249
32	Hippocampal plasticity requires postsynaptic ephrinBs. Nature Neuroscience, 2004, 7, 33-40.	7.1	246
33	A role for BDNF in the late-phase of hippocampal long-term potentiation. Neuropharmacology, 1998, 37, 553-559.	2.0	241
34	Synapse specificity of long-term potentiation breaks down at short distances. Nature, 1997, 388, 279-284.	13.7	225
35	Relative Contribution of Endogenous Neurotrophins in Hippocampal Long-Term Potentiation. Journal of Neuroscience, 1999, 19, 7983-7990.	1.7	221
36	Activity-Dependent Clustering of Functional Synaptic Inputs on Developing Hippocampal Dendrites. Neuron, 2011, 72, 1012-1024.	3.8	216

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37	Mapping Retinotopic Structure in Mouse Visual Cortex with Optical Imaging. Journal of Neuroscience, 2002, 22, 6549-6559.	1.7	210
38	Loss of Sensory Input Causes Rapid Structural Changes of Inhibitory Neurons in Adult Mouse Visual Cortex. Neuron, 2011, 71, 869-882.	3.8	210
39	Formation of target-specific neuronal projections in organotypic slice cultures from rat visual cortex. Nature, 1990, 346, 359-362.	13.7	205
40	Influence of experience on orientation maps in cat visual cortex. Nature Neuroscience, 1999, 2, 727-732.	7.1	199
41	Prior experience enhances plasticity in adult visual cortex. Nature Neuroscience, 2006, 9, 127-132.	7.1	189
42	Orientation Selectivity in Pinwheel Centers in Cat Striate Cortex. Science, 1997, 276, 1551-1555.	6.0	186
43	Neuronal Plasticity: Beyond the Critical Period. Cell, 2014, 159, 727-737.	13.5	186
44	In vivo optical mapping of epileptic foci and surround inhibition in ferret cerebral cortex. Nature Medicine, 2001, 7, 1063-1067.	15.2	178
45	Cell-specific restoration of stimulus preference after monocular deprivation in the visual cortex. Science, 2016, 352, 1319-1322.	6.0	173
46	Optical Imaging of the Layout of Functional Domains in Area 17 and Across the Area 17/18 Border in Cat Visual Cortex. European Journal of Neuroscience, 1995, 7, 1973-1988.	1.2	161
47	The neurotrophin receptor p75NTR modulates long-term depression and regulates the expression of AMPA receptor subunits in the hippocampus. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 7362-7367.	3.3	158
48	Protracted Synaptogenesis after Activity-Dependent Spinogenesis in Hippocampal Neurons. Journal of Neuroscience, 2007, 27, 8149-8156.	1.7	153
49	Development of identical orientation maps for two eyes without common visual experience. Nature, 1996, 379, 251-254.	13.7	149
50	Visual cortex maps are optimized for uniform coverage. Nature Neuroscience, 2000, 3, 822-826.	7.1	149
51	Spatioâ€“temporal frequency domains and their relation to cytochrome oxidase staining in cat visual cortex. Nature, 1997, 385, 529-533.	13.7	142
52	A Role for Local Calcium Signaling in Rapid Synaptic Partner Selection by Dendritic Filopodia. Neuron, 2008, 59, 253-260.	3.8	141
53	Neuronal activity determines the protein synthesis dependence of long-term potentiation. Nature Neuroscience, 2006, 9, 478-480.	7.1	135
54	LTD Induction Causes Morphological Changes of Presynaptic Boutons and Reduces Their Contacts with Spines. Neuron, 2008, 60, 590-597.	3.8	131

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55	Transplanted embryonic neurons integrate into adult neocortical circuits. Nature, 2016, 539, 248-253.	13.7	130
56	Pairing-Induced Changes of Orientation Maps in Cat Visual Cortex. Neuron, 2001, 32, 325-337.	3.8	129
57	Local calcium transients regulate the spontaneous motility of dendritic filopodia. Nature Neuroscience, 2005, 8, 305-312.	7.1	123
58	Relationship Between Lateral Inhibitory Connections and the Topography of the Orientation Map in Cat Visual Cortex. European Journal of Neuroscience, 1994, 6, 1619-1632.	1.2	117
59	Functional Specificity of Long-Range Intrinsic and Interhemispheric Connections in the Visual Cortex of Strabismic Cats. Journal of Neuroscience, 1997, 17, 5480-5492.	1.7	116
60	Lifelong learning: ocular dominance plasticity in mouse visual cortex. Current Opinion in Neurobiology, 2006, 16, 451-459.	2.0	116
61	Hippocampal Long-Term Potentiation Is Supported by Presynaptic and Postsynaptic Tyrosine Receptor Kinase B-Mediated Phospholipase CÂ Signaling. Journal of Neuroscience, 2006, 26, 3496-3504.	1.7	112
62	Altered Map of Visual Space in the Superior Colliculus of Mice Lacking Early Retinal Waves. Journal of Neuroscience, 2005, 25, 6921-6928.	1.7	110
63	Variance and invariance of neuronal long-term representations. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20160161.	1.8	108
64	Multiscale imaging of neurons grown in culture: From light microscopy to cryo-electron tomography. Journal of Structural Biology, 2007, 160, 146-156.	1.3	106
65	Reverse occlusion leads to a precise restoration of orientation preference maps in visual cortex. Nature, 1994, 370, 370-372.	13.7	95
66	Competing for Memory. Neuron, 2004, 44, 1011-1020.	3.8	92
67	Searching for Engrams. Neuron, 2010, 67, 363-371.	3.8	87
68	Lateral geniculate neurons projecting to primary visual cortex show ocular dominance plasticity in adult mice. Nature Neuroscience, 2017, 20, 1708-1714.	7.1	87
69	GABAergic synapses are formed without the involvement of dendritic protrusions. Nature Neuroscience, 2008, 11, 1044-1052.	7.1	84
70	Doxycycline-dependent photoactivated gene expression in eukaryotic systems. Nature Methods, 2009, 6, 527-531.	9.0	81
71	Correlated binocular activity guides recovery from monocular deprivation. Nature, 2002, 416, 430-433.	13.7	77
72	Interactions between synaptic homeostatic mechanisms: an attempt to reconcile BCM theory, synaptic scaling, and changing excitation/inhibition balance. Current Opinion in Neurobiology, 2017, 43, 87-93.	2.0	75

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73	Development of Orientation Preference Maps in Area 18 of Kitten Visual Cortex. European Journal of Neuroscience, 1997, 9, 1754-1762.	1.2	70
74	Endogenous Brain-Derived Neurotrophic Factor Triggers Fast Calcium Transients at Synapses in Developing Dendrites. Journal of Neuroscience, 2007, 27, 1097-1105.	1.7	69
75	Altered Visual Experience Induces Instructive Changes of Orientation Preference in Mouse Visual Cortex. Journal of Neuroscience, 2011, 31, 13911-13920.	1.7	69
76	Mouse prefrontal cortex represents learned rules for categorization. Nature, 2021, 593, 411-417.	13.7	61
77	Area-Specific Mapping of Binocular Disparity across Mouse Visual Cortex. Current Biology, 2019, 29, 2954-2960.e5.	1.8	58
78	Non-Hebbian synapses in rat visual cortex. NeuroReport, 1990, 1, 115-118.	0.6	55
79	The layout of orientation and ocular dominance domains in area 17 of strabismic cats. European Journal of Neuroscience, 1998, 10, 2629-2643.	1.2	54
80	High-resolution functional optical imaging: from the neocortex to the eye. Ophthalmology Clinics of North America, 2004, 17, 53-67.	1.8	52
81	Development of orientation preference in the mammalian visual cortex. , 1999, 41, 18-24.		50
82	Dendritic Spines: The Stuff That Memories Are Made Of?. Current Biology, 2010, 20, R157-R159.	1.8	50
83	Orientation topography of layer 4 lateral networks revealed by optical imaging in cat visual cortex (area 18). European Journal of Neuroscience, 1999, 11, 4291-4308.	1.2	49
84	Selective Persistence of Sensorimotor Mismatch Signals in Visual Cortex of Behaving Alzheimerâ€™s Disease Mice. Current Biology, 2016, 26, 956-964.	1.8	49
85	Molecular and Electrophysiological Characterization of GFP-Expressing CA1 Interneurons in GAD65-GFP Mice. PLoS ONE, 2010, 5, e15915.	1.1	48
86	Two-photon Calcium Imaging in Mice Navigating a Virtual Reality Environment. Journal of Visualized Experiments, 2014, , e50885.	0.2	48
87	Imaging Living Synapses at the Nanoscale by STED Microscopy. Journal of Neuroscience, 2010, 30, 9341-9346.	1.7	47
88	Homeostatic shutdown of long-term potentiation in the adult hippocampus. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 11039-11044.	3.3	42
89	Food and water restriction lead to differential learning behaviors in a head-fixed two-choice visual discrimination task for mice. PLoS ONE, 2018, 13, e0204066.	1.1	42
90	Clusters of synaptic inputs on dendrites of layer 5 pyramidal cells in mouse visual cortex. ELife, 2016, 5, .	2.8	41

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91	Intrinsic and environmental factors in the development of functional maps in cat visual cortex. Neuropharmacology, 1998, 37, 607-621.	2.0	40
92	Shc-binding site in the TrkB receptor is not required for hippocampal long-term potentiation. Neuropharmacology, 2000, 39, 717-724.	2.0	36
93	Function of Dendritic Spines on Hippocampal Inhibitory Neurons. Cerebral Cortex, 2014, 24, 3142-3153.	1.6	31
94	Mouse visual cortex areas represent perceptual and semantic features of learned visual categories. Nature Neuroscience, 2021, 24, 1441-1451.	7.1	31
95	Structural plasticity of GABAergic axons is regulated by network activity and GABAA receptor activation. Frontiers in Neural Circuits, 2013, 7, 113.	1.4	29
96	High-yield in vitro recordings from neurons functionally characterized in vivo. Nature Protocols, 2018, 13, 1275-1293.	5.5	24
97	Experience-dependent plasticity in the lateral geniculate nucleus. Current Opinion in Neurobiology, 2018, 53, 22-28.	2.0	23
98	Limited functional convergence of eye-specific inputs in the retinogeniculate pathway of the mouse. Neuron, 2021, 109, 2457-2468.e12.	3.8	23
99	Parallel processing for associative and neuronal networks. Biological Cybernetics, 1984, 51, 201-204.	0.6	22
100	Optical recording with single cell resolution from monolayered slice cultures of rat hippocampus. Neuroscience Letters, 1988, 92, 259-264.	1.0	22
101	Orientation specificity of contrast adaptation in visual cortical pinwheel centres and iso-orientation domains. European Journal of Neuroscience, 2002, 15, 876-886.	1.2	21
102	Brain Mapping: New Wave Optical Imaging. Current Biology, 2003, 13, R778-R780.	1.8	21
103	Disparity Sensitivity and Binocular Integration in Mouse Visual Cortex Areas. Journal of Neuroscience, 2020, 40, 8883-8899.	1.7	21
104	Benchmarking miniaturized microscopy against two-photon calcium imaging using single-cell orientation tuning in mouse visual cortex. PLoS ONE, 2019, 14, e0214954.	1.1	20
105	Organization of the visual cortex. Nature, 1996, 382, 306-307.	13.7	19
106	Simultaneous imaging of morphological plasticity and calcium dynamics in dendrites. Nature Protocols, 2006, 1, 1859-1864.	5.5	17
107	A low-cost UV laser for flash photolysis of caged compounds. Journal of Neuroscience Methods, 1996, 66, 47-54.	1.3	15
108	Rapid gene transfer into cultured hippocampal neurons and acute hippocampal slices using adenoviral vectors. Molecular Brain Research, 1997, 44, 171-177.	2.5	15

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109	Orientation and direction tuning align with dendritic morphology and spatial connectivity in mouse visual cortex. Current Biology, 2022, 32, 1743-1753.e7.	1.8	15
110	A Molecular Correlate of Ocular Dominance Columns in the Developing Mammalian Visual Cortex. Cerebral Cortex, 2013, 23, 2531-2541.	1.6	13
111	Eyes wide shut. Nature Neuroscience, 1999, 2, 1043-1045.	7.1	9
112	Visual Cortex: Two-Photon Excitement. Current Biology, 2005, 15, R205-R208.	1.8	7
113	Sibling neurons bond to share sensations. Nature, 2012, 486, 41-42.	13.7	7
114	Spaced training enhances memory and prefrontal ensemble stability in mice. Current Biology, 2021, 31, 4052-4061.e6.	1.8	6
115	Optical Imaging of Functional Architecture in Cat Primary Visual Cortex. , 2002, , 131-iii.		3
116	Intrinsic Optical Imaging of Functional Map Development in Mammalian Visual Cortex. Cold Spring Harbor Protocols, 2016, 2016, pdb.top089383.	0.2	2
117	Verschwommene Erinnerungen - Synaptische VerstÃrkung und ihre lokalen Effekte. E-Neuroforum, 2000, 6, 157-164.	0.2	1
118	Reply to Carreira-PerpiÃ±Ã¡n and Goodhill. Neural Computation, 2002, 14, 2053-2056.	1.3	1