

Tobias Bonhoeffer

List of Publications by Year in descending order

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118
papers

22,653
citations

12322

69
h-index

18633

119
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131
all docs

131
docs citations

131
times ranked

17430
citing authors

#	ARTICLE	IF	CITATIONS
1	Orientation and direction tuning align with dendritic morphology and spatial connectivity in mouse visual cortex. <i>Current Biology</i> , 2022, 32, 1743-1753.e7.	1.8	15
2	Mouse prefrontal cortex represents learned rules for categorization. <i>Nature</i> , 2021, 593, 411-417.	13.7	61
3	Limited functional convergence of eye-specific inputs in the retinogeniculate pathway of the mouse. <i>Neuron</i> , 2021, 109, 2457-2468.e12.	3.8	23
4	Mouse visual cortex areas represent perceptual and semantic features of learned visual categories. <i>Nature Neuroscience</i> , 2021, 24, 1441-1451.	7.1	31
5	Spaced training enhances memory and prefrontal ensemble stability in mice. <i>Current Biology</i> , 2021, 31, 4052-4061.e6.	1.8	6
6	Disparity Sensitivity and Binocular Integration in Mouse Visual Cortex Areas. <i>Journal of Neuroscience</i> , 2020, 40, 8883-8899.	1.7	21
7	Area-Specific Mapping of Binocular Disparity across Mouse Visual Cortex. <i>Current Biology</i> , 2019, 29, 2954-2960.e5.	1.8	58
8	Benchmarking miniaturized microscopy against two-photon calcium imaging using single-cell orientation tuning in mouse visual cortex. <i>PLoS ONE</i> , 2019, 14, e0214954.	1.1	20
9	Food and water restriction lead to differential learning behaviors in a head-fixed two-choice visual discrimination task for mice. <i>PLoS ONE</i> , 2018, 13, e0204066.	1.1	42
10	High-yield in vitro recordings from neurons functionally characterized in vivo. <i>Nature Protocols</i> , 2018, 13, 1275-1293.	5.5	24
11	Experience-dependent plasticity in the lateral geniculate nucleus. <i>Current Opinion in Neurobiology</i> , 2018, 53, 22-28.	2.0	23
12	Interactions between synaptic homeostatic mechanisms: an attempt to reconcile BCM theory, synaptic scaling, and changing excitation/inhibition balance. <i>Current Opinion in Neurobiology</i> , 2017, 43, 87-93.	2.0	75
13	Variance and invariance of neuronal long-term representations. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160161.	1.8	108
14	Lateral geniculate neurons projecting to primary visual cortex show ocular dominance plasticity in adult mice. <i>Nature Neuroscience</i> , 2017, 20, 1708-1714.	7.1	87
15	Selective Persistence of Sensorimotor Mismatch Signals in Visual Cortex of Behaving Alzheimer's Disease Mice. <i>Current Biology</i> , 2016, 26, 956-964.	1.8	49
16	What is memory? The present state of the engram. <i>BMC Biology</i> , 2016, 14, 40.	1.7	277
17	Transplanted embryonic neurons integrate into adult neocortical circuits. <i>Nature</i> , 2016, 539, 248-253.	13.7	130
18	Cell-specific restoration of stimulus preference after monocular deprivation in the visual cortex. <i>Science</i> , 2016, 352, 1319-1322.	6.0	173

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19	Intrinsic Optical Imaging of Functional Map Development in Mammalian Visual Cortex. Cold Spring Harbor Protocols, 2016, 2016, pdb.top089383.	0.2	2
20	Clusters of synaptic inputs on dendrites of layer 5 pyramidal cells in mouse visual cortex. ELife, 2016, 5, .	2.8	41
21	Two-photon Calcium Imaging in Mice Navigating a Virtual Reality Environment. Journal of Visualized Experiments, 2014, , e50885.	0.2	48
22	Balance and Stability of Synaptic Structures during Synaptic Plasticity. Neuron, 2014, 82, 430-443.	3.8	349
23	Neuronal Plasticity: Beyond the Critical Period. Cell, 2014, 159, 727-737.	13.5	186
24	Function of Dendritic Spines on Hippocampal Inhibitory Neurons. Cerebral Cortex, 2014, 24, 3142-3153.	1.6	31
25	Grid cells and cortical representation. Nature Reviews Neuroscience, 2014, 15, 466-481.	4.9	249
26	Synaptic Scaling and Homeostatic Plasticity in the Mouse Visual Cortex In Vivo. Neuron, 2013, 80, 327-334.	3.8	301
27	A Molecular Correlate of Ocular Dominance Columns in the Developing Mammalian Visual Cortex. Cerebral Cortex, 2013, 23, 2531-2541.	1.6	13
28	Structural plasticity of GABAergic axons is regulated by network activity and GABA _A receptor activation. Frontiers in Neural Circuits, 2013, 7, 113.	1.4	29
29	Sensorimotor Mismatch Signals in Primary Visual Cortex of the Behaving Mouse. Neuron, 2012, 74, 809-815.	3.8	572
30	Sibling neurons bond to share sensations. Nature, 2012, 486, 41-42.	13.7	7
31	Altered Visual Experience Induces Instructive Changes of Orientation Preference in Mouse Visual Cortex. Journal of Neuroscience, 2011, 31, 13911-13920.	1.7	69
32	Loss of Sensory Input Causes Rapid Structural Changes of Inhibitory Neurons in Adult Mouse Visual Cortex. Neuron, 2011, 71, 869-882.	3.8	210
33	Activity-Dependent Clustering of Functional Synaptic Inputs on Developing Hippocampal Dendrites. Neuron, 2011, 72, 1012-1024.	3.8	216
34	Dendritic Spines: The Stuff That Memories Are Made Of?. Current Biology, 2010, 20, R157-R159.	1.8	50
35	Molecular and Electrophysiological Characterization of GFP-Expressing CA1 Interneurons in CAD65-GFP Mice. PLoS ONE, 2010, 5, e15915.	1.1	48
36	Searching for Engrams. Neuron, 2010, 67, 363-371.	3.8	87

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37	Imaging Living Synapses at the Nanoscale by STED Microscopy. <i>Journal of Neuroscience</i> , 2010, 30, 9341-9346.	1.7	47
38	Experience leaves a lasting structural trace in cortical circuits. <i>Nature</i> , 2009, 457, 313-317.	13.7	462
39	Doxycycline-dependent photoactivated gene expression in eukaryotic systems. <i>Nature Methods</i> , 2009, 6, 527-531.	9.0	81
40	Long-term, high-resolution imaging in the mouse neocortex through a chronic cranial window. <i>Nature Protocols</i> , 2009, 4, 1128-1144.	5.5	894
41	A genetically encoded calcium indicator for chronic in vivo two-photon imaging. <i>Nature Methods</i> , 2008, 5, 805-811.	9.0	458
42	GABAergic synapses are formed without the involvement of dendritic protrusions. <i>Nature Neuroscience</i> , 2008, 11, 1044-1052.	7.1	84
43	Massive restructuring of neuronal circuits during functional reorganization of adult visual cortex. <i>Nature Neuroscience</i> , 2008, 11, 1162-1167.	7.1	275
44	A Role for Local Calcium Signaling in Rapid Synaptic Partner Selection by Dendritic Filopodia. <i>Neuron</i> , 2008, 59, 253-260.	3.8	141
45	LTD Induction Causes Morphological Changes of Presynaptic Boutons and Reduces Their Contacts with Spines. <i>Neuron</i> , 2008, 60, 590-597.	3.8	131
46	Live-cell imaging of dendritic spines by STED microscopy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 18982-18987.	3.3	364
47	Endogenous Brain-Derived Neurotrophic Factor Triggers Fast Calcium Transients at Synapses in Developing Dendrites. <i>Journal of Neuroscience</i> , 2007, 27, 1097-1105.	1.7	69
48	Homeostatic Regulation of Eye-Specific Responses in Visual Cortex during Ocular Dominance Plasticity. <i>Neuron</i> , 2007, 54, 961-972.	3.8	298
49	Multiscale imaging of neurons grown in culture: From light microscopy to cryo-electron tomography. <i>Journal of Structural Biology</i> , 2007, 160, 146-156.	1.3	106
50	Protracted Synaptogenesis after Activity-Dependent Spinogenesis in Hippocampal Neurons. <i>Journal of Neuroscience</i> , 2007, 27, 8149-8156.	1.7	153
51	Hippocampal Long-Term Potentiation Is Supported by Presynaptic and Postsynaptic Tyrosine Receptor Kinase B-Mediated Phospholipase C α Signaling. <i>Journal of Neuroscience</i> , 2006, 26, 3496-3504.	1.7	112
52	A Balance of Protein Synthesis and Proteasome-Dependent Degradation Determines the Maintenance of LTP. <i>Neuron</i> , 2006, 52, 239-245.	3.8	272
53	Prior experience enhances plasticity in adult visual cortex. <i>Nature Neuroscience</i> , 2006, 9, 127-132.	7.1	189
54	Neuronal activity determines the protein synthesis dependence of long-term potentiation. <i>Nature Neuroscience</i> , 2006, 9, 478-480.	7.1	135

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55	Simultaneous imaging of morphological plasticity and calcium dynamics in dendrites. <i>Nature Protocols</i> , 2006, 1, 1859-1864.	5.5	17
56	Highly ordered arrangement of single neurons in orientation pinwheels. <i>Nature</i> , 2006, 442, 925-928.	13.7	293
57	Lifelong learning: ocular dominance plasticity in mouse visual cortex. <i>Current Opinion in Neurobiology</i> , 2006, 16, 451-459.	2.0	116
58	Homeostatic shutdown of long-term potentiation in the adult hippocampus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 11039-11044.	3.3	42
59	Local calcium transients regulate the spontaneous motility of dendritic filopodia. <i>Nature Neuroscience</i> , 2005, 8, 305-312.	7.1	123
60	Visual Cortex: Two-Photon Excitement. <i>Current Biology</i> , 2005, 15, R205-R208.	1.8	7
61	Live imaging of effector cell trafficking and autoantigen recognition within the unfolding autoimmune encephalomyelitis lesion. <i>Journal of Experimental Medicine</i> , 2005, 201, 1805-1814.	4.2	249
62	The neurotrophin receptor p75NTR modulates long-term depression and regulates the expression of AMPA receptor subunits in the hippocampus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 7362-7367.	3.3	158
63	Altered Map of Visual Space in the Superior Colliculus of Mice Lacking Early Retinal Waves. <i>Journal of Neuroscience</i> , 2005, 25, 6921-6928.	1.7	110
64	The p75 Neurotrophin Receptor Negatively Modulates Dendrite Complexity and Spine Density in Hippocampal Neurons. <i>Journal of Neuroscience</i> , 2005, 25, 9989-9999.	1.7	251
65	Hippocampal plasticity requires postsynaptic ephrinBs. <i>Nature Neuroscience</i> , 2004, 7, 33-40.	7.1	246
66	Genesis of dendritic spines: insights from ultrastructural and imaging studies. <i>Nature Reviews Neuroscience</i> , 2004, 5, 24-34.	4.9	545
67	Competing for Memory. <i>Neuron</i> , 2004, 44, 1011-1020.	3.8	92
68	Bidirectional Activity-Dependent Morphological Plasticity in Hippocampal Neurons. <i>Neuron</i> , 2004, 44, 759-767.	3.8	517
69	High-resolution functional optical imaging: from the neocortex to the eye. <i>Ophthalmology Clinics of North America</i> , 2004, 17, 53-67.	1.8	52
70	Brain Mapping: New Wave Optical Imaging. <i>Current Biology</i> , 2003, 13, R778-R780.	1.8	21
71	Synaptopodin-deficient mice lack a spine apparatus and show deficits in synaptic plasticity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 10494-10499.	3.3	265
72	Reply to Carreira-Perpiñán and Goodhill. <i>Neural Computation</i> , 2002, 14, 2053-2056.	1.3	1

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73	Spine Motility. Neuron, 2002, 35, 1019-1027.	3.8	317
74	Mechanism of TrkB-Mediated Hippocampal Long-Term Potentiation. Neuron, 2002, 36, 121-137.	3.8	434
75	Optical Imaging of Functional Architecture in Cat Primary Visual Cortex. , 2002, , 131-iii.		3
76	Mapping Retinotopic Structure in Mouse Visual Cortex with Optical Imaging. Journal of Neuroscience, 2002, 22, 6549-6559.	1.7	210
77	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
78	Correlated binocular activity guides recovery from monocular deprivation. Nature, 2002, 416, 430-433.	13.7	77
79	Morphological Changes in Dendritic Spines Associated with Long-Term Synaptic Plasticity. Annual Review of Neuroscience, 2001, 24, 1071-1089.	5.0	1,095
80	Pairing-Induced Changes of Orientation Maps in Cat Visual Cortex. Neuron, 2001, 32, 325-337.	3.8	129
81	Kinase-Independent Requirement of EphB2 Receptors in Hippocampal Synaptic Plasticity. Neuron, 2001, 32, 1027-1040.	3.8	285
82	Tuning and Topography in an Odor Map on the Rat Olfactory Bulb. Journal of Neuroscience, 2001, 21, 1351-1360.	1.7	365
83	In vivo optical mapping of epileptic foci and surround inhibition in ferret cerebral cortex. Nature Medicine, 2001, 7, 1063-1067.	15.2	178
84	Visual cortex maps are optimized for uniform coverage. Nature Neuroscience, 2000, 3, 822-826.	7.1	149
85	Verschwommene Erinnerungen - Synaptische Verstärkung und ihre lokalen Effekte. E-Neuroforum, 2000, 6, 157-164.	0.2	1
86	Shc-binding site in the TrkB receptor is not required for hippocampal long-term potentiation. Neuropharmacology, 2000, 39, 717-724.	2.0	36
87	Relative Contribution of Endogenous Neurotrophins in Hippocampal Long-Term Potentiation. Journal of Neuroscience, 1999, 19, 7983-7990.	1.7	221
88	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
89	Influence of experience on orientation maps in cat visual cortex. Nature Neuroscience, 1999, 2, 727-732.	7.1	199
90	Dendritic spine changes associated with hippocampal long-term synaptic plasticity. Nature, 1999, 399, 66-70.	13.7	1,556

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91	Eyes wide shut. <i>Nature Neuroscience</i> , 1999, 2, 1043-1045.	7.1	9
92	Development of orientation preference in the mammalian visual cortex. , 1999, 41, 18-24.		50
93	Essential Role for TrkB Receptors in Hippocampus-Mediated Learning. <i>Neuron</i> , 1999, 24, 401-414.	3.8	731
94	The layout of orientation and ocular dominance domains in area 17 of strabismic cats. <i>European Journal of Neuroscience</i> , 1998, 10, 2629-2643.	1.2	54
95	Intrinsic and environmental factors in the development of functional maps in cat visual cortex. <i>Neuropharmacology</i> , 1998, 37, 607-621.	2.0	40
96	A role for BDNF in the late-phase of hippocampal long-term potentiation. <i>Neuropharmacology</i> , 1998, 37, 553-559.	2.0	241
97	Orientation Selectivity in Pinwheel Centers in Cat Striate Cortex. <i>Science</i> , 1997, 276, 1551-1555.	6.0	186
98	Rapid gene transfer into cultured hippocampal neurons and acute hippocampal slices using adenoviral vectors. <i>Molecular Brain Research</i> , 1997, 44, 171-177.	2.5	15
99	Functional Specificity of Long-Range Intrinsic and Interhemispheric Connections in the Visual Cortex of Strabismic Cats. <i>Journal of Neuroscience</i> , 1997, 17, 5480-5492.	1.7	116
100	Development of Orientation Preference Maps in Area 18 of Kitten Visual Cortex. <i>European Journal of Neuroscience</i> , 1997, 9, 1754-1762.	1.2	70
101	Spatio-temporal frequency domains and their relation to cytochrome oxidase staining in cat visual cortex. <i>Nature</i> , 1997, 385, 529-533.	13.7	142
102	Synapse specificity of long-term potentiation breaks down at short distances. <i>Nature</i> , 1997, 388, 279-284.	13.7	225
103	Spatial Relationships among Three Columnar Systems in Cat Area 17. <i>Journal of Neuroscience</i> , 1997, 17, 9270-9284.	1.7	309
104	Neurotrophins and activity-dependent development of the neocortex. <i>Current Opinion in Neurobiology</i> , 1996, 6, 119-126.	2.0	298
105	Development of Orientation Preference Maps in Ferret Primary Visual Cortex. <i>Journal of Neuroscience</i> , 1996, 16, 6443-6453.	1.7	307
106	Virus-mediated gene transfer into hippocampal CA1 region restores long-term potentiation in brain-derived neurotrophic factor mutant mice.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1996, 93, 12547-12552.	3.3	353
107	A low-cost UV laser for flash photolysis of caged compounds. <i>Journal of Neuroscience Methods</i> , 1996, 66, 47-54.	1.3	15
108	Development of identical orientation maps for two eyes without common visual experience. <i>Nature</i> , 1996, 379, 251-254.	13.7	149

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109	Organization of the visual cortex. <i>Nature</i> , 1996, 382, 306-307.	13.7	19
110	Hippocampal long-term potentiation is impaired in mice lacking brain-derived neurotrophic factor.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1995, 92, 8856-8860.	3.3	1,322
111	Optical Imaging of the Layout of Functional Domains in Area 17 and Across the Area 17/18 Border in Cat Visual Cortex. <i>European Journal of Neuroscience</i> , 1995, 7, 1973-1988.	1.2	161
112	Reverse occlusion leads to a precise restoration of orientation preference maps in visual cortex. <i>Nature</i> , 1994, 370, 370-372.	13.7	95
113	Relationship Between Lateral Inhibitory Connections and the Topography of the Orientation Map in Cat Visual Cortex. <i>European Journal of Neuroscience</i> , 1994, 6, 1619-1632.	1.2	117
114	Iso-orientation domains in cat visual cortex are arranged in pinwheel-like patterns. <i>Nature</i> , 1991, 353, 429-431.	13.7	798
115	Non-Hebbian synapses in rat visual cortex. <i>NeuroReport</i> , 1990, 1, 115-118.	0.6	55
116	Formation of target-specific neuronal projections in organotypic slice cultures from rat visual cortex. <i>Nature</i> , 1990, 346, 359-362.	13.7	205
117	Optical recording with single cell resolution from monolayered slice cultures of rat hippocampus. <i>Neuroscience Letters</i> , 1988, 92, 259-264.	1.0	22
118	Parallel processing for associative and neuronal networks. <i>Biological Cybernetics</i> , 1984, 51, 201-204.	0.6	22