

Rainer W Friedrich

List of Publications by Year in descending order

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76
papers

6,938
citations

101384

36
h-index

76769

74
g-index

84
all docs

84
docs citations

84
times ranked

6874
citing authors

#	ARTICLE	IF	CITATIONS
1	Combinatorial and Chemotopic Odorant Coding in the Zebrafish Olfactory Bulb Visualized by Optical Imaging. <i>Neuron</i> , 1997, 18, 737-752.	3.8	542
2	Amygdala interneuron subtypes control fear learning through disinhibition. <i>Nature</i> , 2014, 509, 453-458.	13.7	433
3	Odor Encoding as an Active, Dynamical Process: Experiments, Computation, and Theory. <i>Annual Review of Neuroscience</i> , 2001, 24, 263-297.	5.0	413
4	Experience-Dependent Plasticity of Odor Representations in the Telencephalon of Zebrafish. <i>Current Biology</i> , 2018, 28, 1-14.e3.	1.8	372
5	Reconstruction of firing rate changes across neuronal populations by temporally deconvolved Ca ²⁺ imaging. <i>Nature Methods</i> , 2006, 3, 377-383.	9.0	312
6	NompC TRP Channel Required for Vertebrate Sensory Hair Cell Mechanotransduction. <i>Science</i> , 2003, 301, 96-99.	6.0	303
7	Genetic Analysis of Vertebrate Sensory Hair Cell Mechanosensation: the Zebrafish Circler Mutants. <i>Neuron</i> , 1998, 20, 271-283.	3.8	286
8	Chemotopic, Combinatorial, and Noncombinatorial Odorant Representations in the Olfactory Bulb Revealed Using a Voltage-Sensitive Axon Tracer. <i>Journal of Neuroscience</i> , 1998, 18, 9977-9988.	1.7	260
9	Temporal Dynamics and Latency Patterns of Receptor Neuron Input to the Olfactory Bulb. <i>Journal of Neuroscience</i> , 2006, 26, 1247-1259.	1.7	238
10	Functional Fluorescent Ca ²⁺ Indicator Proteins in Transgenic Mice under TET Control. <i>PLoS Biology</i> , 2004, 2, e163.	2.6	216
11	Multiplexing using synchrony in the zebrafish olfactory bulb. <i>Nature Neuroscience</i> , 2004, 7, 862-871.	7.1	210
12	Chondroitin Fragments Are Odorants that Trigger Fear Behavior in Fish. <i>Current Biology</i> , 2012, 22, 538-544.	1.8	209
13	Circuit Neuroscience in Zebrafish. <i>Current Biology</i> , 2010, 20, R371-R381.	1.8	181
14	Olfactory pattern classification by discrete neuronal network states. <i>Nature</i> , 2010, 465, 47-52.	13.7	165
15	Processing of Odor Mixtures in the Zebrafish Olfactory Bulb. <i>Journal of Neuroscience</i> , 2004, 24, 6611-6620.	1.7	122
16	Early Development of Functional Spatial Maps in the Zebrafish Olfactory Bulb. <i>Journal of Neuroscience</i> , 2005, 25, 5784-5795.	1.7	119
17	Dense EM-based reconstruction of the interglomerular projectome in the zebrafish olfactory bulb. <i>Nature Neuroscience</i> , 2016, 19, 816-825.	7.1	118
18	Community-based benchmarking improves spike rate inference from two-photon calcium imaging data. <i>PLoS Computational Biology</i> , 2018, 14, e1006157.	1.5	118

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19	Mechanisms of pattern decorrelation by recurrent neuronal circuits. <i>Nature Neuroscience</i> , 2010, 13, 1003-1010.	7.1	109
20	Optogenetic dissection of neuronal circuits in zebrafish using viral gene transfer and the Tet system. <i>Frontiers in Neural Circuits</i> , 2009, 3, 21.	1.4	107
21	High-resolution optical control of spatiotemporal neuronal activity patterns in zebrafish using a digital micromirror device. <i>Nature Protocols</i> , 2012, 7, 1410-1425.	5.5	107
22	Functional organization of sensory input to the olfactory bulb glomerulus analyzed by two-photon calcium imaging. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 9097-9102.	3.3	100
23	gemini Encodes a Zebrafish L-Type Calcium Channel That Localizes at Sensory Hair Cell Ribbon Synapses. <i>Journal of Neuroscience</i> , 2004, 24, 4213-4223.	1.7	95
24	Transformation of odor representations in target areas of the olfactory bulb. <i>Nature Neuroscience</i> , 2009, 12, 474-482.	7.1	91
25	Neuronal filtering of multiplexed odour representations. <i>Nature</i> , 2011, 479, 493-498.	13.7	91
26	Dynamics of Olfactory Bulb Input and Output Activity During Odor Stimulation in Zebrafish. <i>Journal of Neurophysiology</i> , 2004, 91, 2658-2669.	0.9	83
27	Mechanisms of odor discrimination: neurophysiological and behavioral approaches. <i>Trends in Neurosciences</i> , 2006, 29, 40-47.	4.2	80
28	Topological Reorganization of Odor Representations in the Olfactory Bulb. <i>PLoS Biology</i> , 2007, 5, e178.	2.6	79
29	Whitening of odor representations by the wiring diagram of the olfactory bulb. <i>Nature Neuroscience</i> , 2020, 23, 433-442.	7.1	67
30	Whole-body integration of gene expression and single-cell morphology. <i>Cell</i> , 2021, 184, 4819-4837.e22.	13.5	65
31	Equalization of odor representations by a network of electrically coupled inhibitory interneurons. <i>Nature Neuroscience</i> , 2013, 16, 1678-1686.	7.1	64
32	Recent dynamics in olfactory population coding. <i>Current Opinion in Neurobiology</i> , 2001, 11, 468-474.	2.0	60
33	Analyzing the structure and function of neuronal circuits in zebrafish. <i>Frontiers in Neural Circuits</i> , 2013, 7, 71.	1.4	60
34	A database and deep learning toolbox for noise-optimized, generalized spike inference from calcium imaging. <i>Nature Neuroscience</i> , 2021, 24, 1324-1337.	7.1	57
35	Remote z-scanning with a macroscopic voice coil motor for fast 3D multiphoton laser scanning microscopy. <i>Biomedical Optics Express</i> , 2016, 7, 1656.	1.5	55
36	A virtual reality system to analyze neural activity and behavior in adult zebrafish. <i>Nature Methods</i> , 2020, 17, 343-351.	9.0	53

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37	Physiological functions of FMRFamide-like peptides (FLPs) in crustaceans. <i>Microscopy Research and Technique</i> , 2003, 60, 313-324.	1.2	51
38	Functional development of the olfactory system in zebrafish. <i>Mechanisms of Development</i> , 2013, 130, 336-346.	1.7	46
39	Neuronal Computations in the Olfactory System of Zebrafish. <i>Annual Review of Neuroscience</i> , 2013, 36, 383-402.	5.0	45
40	Control of a specific motor program by a small brain area in zebrafish. <i>Frontiers in Neural Circuits</i> , 2013, 7, 67.	1.4	43
41	Dopaminergic Modulation of Mitral Cells and Odor Responses in the Zebrafish Olfactory Bulb. <i>Journal of Neuroscience</i> , 2012, 32, 6830-6840.	1.7	42
42	Multiple functions of GABA _A and GABA _B receptors during pattern processing in the zebrafish olfactory bulb. <i>European Journal of Neuroscience</i> , 2008, 28, 117-127.	1.2	38
43	Fast Homogeneous En Bloc Staining of Large Tissue Samples for Volume Electron Microscopy. <i>Frontiers in Neuroanatomy</i> , 2018, 12, 76.	0.9	37
44	Olfactory Neuroscience: Beyond the Bulb. <i>Current Biology</i> , 2011, 21, R438-R440.	1.8	36
45	Neuronal circuits and computations: Pattern decorrelation in the olfactory bulb. <i>FEBS Letters</i> , 2014, 588, 2504-2513.	1.3	36
46	3-dimensional electron microscopic imaging of the zebrafish olfactory bulb and dense reconstruction of neurons. <i>Scientific Data</i> , 2016, 3, 160100.	2.4	36
47	Olfactory imprinting is triggered by MHC peptide ligands. <i>Scientific Reports</i> , 2013, 3, 2800.	1.6	32
48	Precise Synaptic Balance in the Zebrafish Homolog of Olfactory Cortex. <i>Neuron</i> , 2018, 100, 669-683.e5.	3.8	32
49	Pattern orthogonalization via channel decorrelation by adaptive networks. <i>Journal of Computational Neuroscience</i> , 2010, 28, 29-45.	0.6	30
50	Early functional development of interneurons in the zebrafish olfactory bulb. <i>European Journal of Neuroscience</i> , 2007, 25, 460-470.	1.2	27
51	Olfaction in zebrafish: what does a tiny teleost tell us?. <i>Seminars in Cell and Developmental Biology</i> , 1997, 8, 181-187.	2.3	26
52	Pharmacological Analysis of Ionotropic Glutamate Receptor Function in Neuronal Circuits of the Zebrafish Olfactory Bulb. <i>PLoS ONE</i> , 2008, 3, e1416.	1.1	26
53	Illuminating Vertebrate Olfactory Processing. <i>Journal of Neuroscience</i> , 2012, 32, 14102-14108a.	1.7	25
54	Associative conditioning remaps odor representations and modifies inhibition in a higher olfactory brain area. <i>Nature Neuroscience</i> , 2019, 22, 1844-1856.	7.1	24

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55	Fast gene transfer into the adult zebrafish brain by herpes simplex virus 1 (HSV-1) and electroporation: methods and optogenetic applications. <i>Frontiers in Neural Circuits</i> , 2014, 8, 41.	1.4	22
56	Real time odor representations. <i>Trends in Neurosciences</i> , 2002, 25, 487-489.	4.2	20
57	The recombination activation gene 1 (Rag1) is expressed in a subset of zebrafish olfactory neurons but is not essential for axon targeting or amino acid detection. <i>BMC Neuroscience</i> , 2005, 6, 46.	0.8	20
58	SBEMImage: Versatile Acquisition Control Software for Serial Block-Face Electron Microscopy. <i>Frontiers in Neural Circuits</i> , 2018, 12, 54.	1.4	17
59	Rapid olfactory discrimination learning in adult zebrafish. <i>Experimental Brain Research</i> , 2018, 236, 2959-2969.	0.7	16
60	Protein Kinase C Is Required for Long-Lasting Synaptic Enhancement by the Neuropeptide DRNFLRFamide in Crayfish. <i>Journal of Neurophysiology</i> , 1998, 79, 1127-1131.	0.9	15
61	Dense Circuit Reconstruction to Understand Neuronal Computation: Focus on Zebrafish. <i>Annual Review of Neuroscience</i> , 2021, 44, 275-293.	5.0	14
62	Processing of Odor Representations by Neuronal Circuits in the Olfactory Bulb. <i>Annals of the New York Academy of Sciences</i> , 2009, 1170, 293-297.	1.8	13
63	Dopaminergic modulation of synaptic transmission and neuronal activity patterns in the zebrafish homolog of olfactory cortex. <i>Frontiers in Neural Circuits</i> , 2012, 6, 76.	1.4	13
64	Quantifying the climate impact of emissions from land-based transport in Germany. <i>Transportation Research, Part D: Transport and Environment</i> , 2018, 65, 825-845.	3.2	12
65	Temperature dependence of synaptic modulation by a FMRFamide-related neuropeptide in crayfish. <i>Neuroscience Letters</i> , 1994, 169, 56-58.	1.0	11
66	A light switch for pain. <i>Nature Chemical Biology</i> , 2013, 9, 219-220.	3.9	10
67	Vertebrate versus invertebrate neural circuits. <i>Current Biology</i> , 2013, 23, R504-R506.	1.8	9
68	Odorant receptors make scents. <i>Nature</i> , 2004, 430, 511-512.	13.7	7
69	Calcium Imaging in the Intact Olfactory System of Zebrafish and Mouse. <i>Cold Spring Harbor Protocols</i> , 2014, 2014, pdb.prot081166.	0.2	7
70	Neural Circuits: Random Design of a Higher-Order Olfactory Projection. <i>Current Biology</i> , 2013, 23, R448-R451.	1.8	2
71	Targeted Electroporation in Embryonic, Larval, and Adult Zebrafish. <i>Methods in Molecular Biology</i> , 2016, 1451, 259-269.	0.4	2
72	Stereotopy versus stochasticity in olfaction. <i>Nature Neuroscience</i> , 2014, 17, 147-149.	7.1	1

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73	Individuality sniffed out in flies. <i>Nature</i> , 2015, 526, 200-201.	13.7	1
74	Spatial Representation of Odors in the Zebrafish Olfactory Epithelium and Olfactory Bulb. , 1999, , 525-533.		1
75	Multimodal patterns of inhibitory activity in cerebellar cortex. <i>Neuron</i> , 2021, 109, 1590-1592.	3.8	0
76	Precise Synaptic Balance in the Zebrafish Homolog of Olfactory Cortex. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0