Rafael Yuste

List of Publications by Year
in descending order

151 papers	24,956 citations	4440 81 h-index	5748 152 g-index
182 all docs	182 docs citations	182 times ranked	23299 citing authors

#	Article	IF	Citations
1	Breaking the neural code of a cnidarian: Learning principles of neuroscience from the â€œvulgarâ€•Hydra. Current Opinion in Neurobiology, 2024, 86, 102869.	5.0	2
2	Stimulus encoding by specific inactivation of cortical neurons. Nature Communications, 2024, 15, .	14.1	3
3	Peptide-driven control of somersaulting in Hydra vulgaris. Current Biology, 2023, 33, 1893-1905.e4.	3.9	15
4	Advocating for neurodata privacy and neurotechnology regulation. Nature Protocols, 2023, 18, 2869-2875.	14.6	17
5	A Technocratic Oath. Wissenschaftsethik Und Technikfolgenbeurteilung, 2022, , 163-174.	0.0	4
6	Structural Analysis of Human and Mouse Dendritic Spines Reveals a Morphological Continuum and Differences across Ages and Species. ENeuro, 2022, 9, ENEURO.0039-22.2022.	2.2	15
7	Towards a Governance Framework for Brain Data. Neuroethics, 2022, 15, .	3.8	48
8	Author response: Intrinsic excitability mechanisms of neuronal ensemble formation. , 2022, , .		1
9	An in vitro model of neuronal ensembles. Nature Communications, 2022, 13, .	14.1	14
10	Recommendations for Responsible Development and Application of Neurotechnologies. Neuroethics, 2021, 14, 365-386.	3.8	94
11	Cortical ensembles selective for context. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.7	23
12	Ultrastructural analysis of dendritic spine necks reveals a continuum of spine morphologies. Developmental Neurobiology, 2021, 81, 746-757.	2.2	37
13	Author response: Long-term stability of cortical ensembles. , 2021, , .		2
14	Identification of Pattern Completion Neurons in Neuronal Ensembles Using Probabilistic Graphical Models. Journal of Neuroscience, 2021, 41, 8577-8588.	3.7	11
15	Ensemble synchronization in the reassembly of Hydraâ€™s nervous system. Current Biology, 2021, 31, 3784-3796.e3.	3.9	12
16	Holographic Imaging and Stimulation of Neural Circuits. Advances in Experimental Medicine and Biology, 2021, , 613-639.	0.0	2
17	Tracking calcium dynamics from individual neurons in behaving animals. PLoS Computational Biology, 2021, 17, e1009432.	3.3	22
18	Time for NanoNeuro. Nature Methods, 2021, 18, 1287-1293.	14.5	26

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19	Simultaneous two-photon imaging of action potentials and subthreshold inputs in vivo. Nature Communications, 2021, 12, .	14.1	22
20	A community-based transcriptomics classification and nomenclature of neocortical cell types. Nature Neuroscience, 2020, 23, 1456-1468.	12.4	162
21	International Brain Initiative: An Innovative Framework for Coordinated Global Brain Research Efforts. Neuron, 2020, 105, 212-216.	12.8	50
22	Playing the piano with the cortex: role of neuronal ensembles and pattern completion in perception and behavior. Current Opinion in Neurobiology, 2020, 64, 89-95.	5.0	49
23	Whole-Body Imaging of Neural and Muscle Activity during Behavior in<i>Hydra vulgaris</i>: Effect of Osmolarity on Contraction Bursts. ENeuro, 2020, 7, ENEURO.0539-19.2020.	2.2	21
24	A miniaturized multi-clamp CMOS amplifier for intracellular neural recording. Nature Electronics, 2019, 2, 343-350.	18.3	10
25	Controlling Visually Guided Behavior by Holographic Recalling of Cortical Ensembles. Cell, 2019, 178, 447-457.e5.	35.1	205
26	Electrodiffusion models of synaptic potentials in dendritic spines. Journal of Computational Neuroscience, 2019, 47, 77-89.	1.7	15
27	Conserved cell types with divergent features in human versus mouse cortex. Nature, 2019, 573, 61-68.	40.1	986
28	Acute Focal Seizures Start As Local Synchronizations of Neuronal Ensembles. Journal of Neuroscience, 2019, 39, 8562-8575.	3.7	61
29	Genetic voltage indicators. BMC Biology, 2019, 17, .	4.0	90
30	Mapping the Whole-Body Muscle Activity of Hydra vulgaris. Current Biology, 2019, 29, 1807-1817.e3.	3.9	43
31	Reduced Repertoire of Cortical Microstates and Neuronal Ensembles in Medically Induced Loss of Consciousness. Cell Systems, 2019, 8, 467-474.e4.	6.0	41
32	Comparative Evaluation of Genetically Encoded Voltage Indicators. Cell Reports, 2019, 26, 802-813.e4.	6.4	118
33	Flexible Nanopipettes for Minimally Invasive Intracellular Electrophysiology InÂVivo. Cell Reports, 2019, 26, 266-278.e5.	6.4	52
34	Holographic imaging and photostimulation of neural activity. Current Opinion in Neurobiology, 2018, 50, 211-221.	5.0	36
35	Statistically Reconstructed Multiplexing for Very Dense, High-Channel-Count Acquisition Systems. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 13-23.	4.9	17
36	Parvalbumin-Positive Interneurons Regulate Neuronal Ensembles in Visual Cortex. Cerebral Cortex, 2018, 28, 1831-1845.	2.9	51

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37	Neuronal photoactivation through second-harmonic near-infrared absorption by gold nanoparticles. Light: Science and Applications, 2018, 7, .	16.0	28
38	Two-Photon Optogenetic Mapping of Excitatory Synaptic Connectivity and Strength. IScience, 2018, 8, 15-28.	3.8	12
39	Light sheet theta microscopy for rapid high-resolution imaging of large biological samples. BMC Biology, 2018, 16, .	4.0	74
40	Role of inhibitory control in modulating focal seizure spread. Brain, 2018, 141, 2083-2097.	8.9	69
41	Correction to â€œStatistically Reconstructed Multiplexing for Very Dense, High-Channel-Count Acquisition Systemsâ€•[Feb 18 13-23]. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 1215-1216.	4.9	1
42	Author response: Simultaneous two-photon imaging and two-photon optogenetics of cortical circuits in three dimensions. , 2018, , .		4
43	Author response: Comprehensive machine learning analysis of Hydra behavior reveals a stable basal behavioral repertoire. , 2018, , .		0
44	Toward a Global BRAIN Initiative. Cell, 2017, 168, 956-959.	35.1	45
45	Altered Cortical Ensembles in Mouse Models of Schizophrenia. Neuron, 2017, 94, 153-167.e8.	12.8	137
46	Non-overlapping Neural Networks in Hydra vulgaris. Current Biology, 2017, 27, 1085-1097.	3.9	131
47	In vivo imaging of neural activity. Nature Methods, 2017, 14, 349-359.	14.5	302
48	Imaging and Optically Manipulating Neuronal Ensembles. Annual Review of Biophysics, 2017, 46, 271-293.	13.3	74
49	Back to the Basics: Cnidarians Start to Fire. Trends in Neurosciences, 2017, 40, 92-105.	13.4	85
50	Overproduction of Neurons Is Correlated with Enhanced Cortical Ensembles and Increased Perceptual Discrimination. Cell Reports, 2017, 21, 381-392.	6.4	22
51	Attenuation of Synaptic Potentials in Dendritic Spines. Cell Reports, 2017, 20, 1100-1110.	6.4	53
52	Reliable and Elastic Propagation of Cortical Seizures InÂVivo. Cell Reports, 2017, 19, 2681-2693.	6.4	85
53	Four ethical priorities for neurotechnologies and AI. Nature, 2017, 551, 159-163.	40.1	336
54	moco: Fast Motion Correction for Calcium Imaging. Frontiers in Neuroinformatics, 2016, 10, .	2.7	121

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55	Modulation of nitrogen vacancy charge state and fluorescence in nanodiamonds using electrochemical potential. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 3938-3943.	7.7	83
56	On the Necessity of Ethical Guidelines for Novel Neurotechnologies. Cell, 2016, 167, 882-885.	35.1	62
57	Opening Holes in the Blanket of Inhibition: Localized Lateral Disinhibition by VIP Interneurons. Journal of Neuroscience, 2016, 36, 3471-3480.	3.7	149
58	Simultaneous Multi-plane Imaging of Neural Circuits. Neuron, 2016, 89, 269-284.	12.8	175
59	Simultaneous Denoising, Deconvolution, and Demixing of Calcium Imaging Data. Neuron, 2016, 89, 285-299.	12.8	647
60	Targeted intracellular voltage recordings from dendritic spines using quantum-dot-coated nanopipettes. Nature Nanotechnology, 2016, 12, 335-342.	23.9	97
61	The discovery of dendritic spines by Cajal. Frontiers in Neuroanatomy, 2015, 9, .	2.2	41
62	Endogenous Sequential Cortical Activity Evoked by Visual Stimuli. Journal of Neuroscience, 2015, 35, 8813-8828.	3.7	86
63	From the neuron doctrine to neural networks. Nature Reviews Neuroscience, 2015, 16, 487-497.	10.0	489
64	A National Network of Neurotechnology Centers for the BRAIN Initiative. Neuron, 2015, 88, 445-448.	12.8	15
65	The new nanophysiology: regulation of ionic flow in neuronal subcompartments. Nature Reviews Neuroscience, 2015, 16, 685-692.	10.0	58
66	Simultaneous imaging of neural activity in three dimensions. Frontiers in Neural Circuits, 2014, 8, .	2.7	71
67	Visual stimuli recruit intrinsically generated cortical ensembles. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, .	7.7	197
68	The New Century of the Brain. Scientific American, 2014, 310, 38-45.	0.1	29
69	A blanket of inhibition: functional inferences from dense inhibitory connectivity. Current Opinion in Neurobiology, 2014, 26, 96-102.	5.0	127
70	Random Positions of Dendritic Spines in Human Cerebral Cortex. Journal of Neuroscience, 2014, 34, 10078-10084.	3.7	13
71	Activity-dependent dendritic spine neck changes are correlated with synaptic strength. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, .	7.7	145
72	Age-Based Comparison of Human Dendritic Spine Structure Using Complete Three-Dimensional Reconstructions. Cerebral Cortex, 2013, 23, 1798-1810.	2.9	114

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73	New insights into the classification and nomenclature of cortical GABAergic interneurons. Nature Reviews Neuroscience, 2013, 14, 202-216.	10.0	628
74	Dense and Overlapping Innervation of Pyramidal Neurons by Chandelier Cells. Journal of Neuroscience, 2013, 33, 1907-1914.	3.7	70
75	Nanotools for Neuroscience and Brain Activity Mapping. ACS Nano, 2013, 7, 1850-1866.	15.4	301
76	Electrical Compartmentalization in Dendritic Spines. Annual Review of Neuroscience, 2013, 36, 429-449.	12.3	135
77	Decorrelating Action of Inhibition in Neocortical Networks. Journal of Neuroscience, 2013, 33, 9813-9830.	3.7	51
78	Classification of neocortical interneurons using affinity propagation. Frontiers in Neural Circuits, 2013, 7, .	2.7	22
79	Evidence of an inhibitory restraint of seizure activity in humans. Nature Communications, 2012, 3, .	14.1	325
80	Two-photon optogenetics of dendritic spines and neural circuits. Nature Methods, 2012, 9, 1202-1205.	14.5	199
81	Two-photon optogenetic toolbox for fast inhibition, excitation and bistable modulation. Nature Methods, 2012, 9, 1171-1179.	14.5	247
82	The Brain Activity Map Project and the Challenge of Functional Connectomics. Neuron, 2012, 74, 970-974.	12.8	455
83	Three-Dimensional Analysis of Spiny Dendrites Using Straightening and Unrolling Transforms. Neuroinformatics, 2012, 10, 391-407.	3.0	5
84	Dense Inhibitory Connectivity in Neocortex. Neuron, 2011, 69, 1188-1203.	12.8	407
85	Dendritic Spines and Distributed Circuits. Neuron, 2011, 71, 772-781.	12.8	229
86	Comparison between supervised and unsupervised classifications of neuronal cell types: A case study. Developmental Neurobiology, 2011, 71, 71-82.	2.2	70
87	State-Dependent Function of Neocortical Chandelier Cells. Journal of Neuroscience, 2011, 31, 17872-17886.	3.7	104
88	Dense, Unspecific Connectivity of Neocortical Parvalbumin-Positive Interneurons: A Canonical Microcircuit for Inhibition?. Journal of Neuroscience, 2011, 31, 13260-13271.	3.7	368
89	Quantitative classification of somatostatin-positive neocortical interneurons identifies three interneuron subtypes. Frontiers in Neural Circuits, 2010, , .	2.7	117
90	A portable laser photostimulation and imaging microscope. Journal of Neural Engineering, 2010, 7, 045001.	4.0	13

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91	Dendritic Spines. , 2010, , .		132
92	RuBi-Glutamate: Two-photon and visible-light photoactivation of neurons and dendritic spines. Frontiers in Neural Circuits, 2009, 3, .	2.7	157
93	Two-photon imaging with diffractive optical elements. Frontiers in Neural Circuits, 2009, 3, .	2.7	26
94	Petilla terminology: nomenclature of features of GABAergic interneurons of the cerebral cortex. Nature Reviews Neuroscience, 2008, 9, 557-568.	10.0	1,169
95	Of Mice and Men, and Chandeliers. PLoS Biology, 2008, 6, e243.	5.2	18
96	Role of Rho GTPases in the Morphogenesis and Motility of Dendritic Spines. Methods in Enzymology, 2008, , 285-302.	1.0	40
97	SLM microscopy: scanless two-photon imaging and photostimulation using spatial light modulators. Frontiers in Neural Circuits, 2008, 2, .	2.7	267
98	Feedforward Inhibition Contributes to the Control of Epileptiform Propagation Speed. Journal of Neuroscience, 2007, 27, 3383-3387.	3.7	220
99	Correlation Between Axonal Morphologies and Synaptic Input Kinetics of Interneurons from Mouse Visual Cortex. Cerebral Cortex, 2007, 17, 81-91.	2.9	91
100	Sodium channels amplify spine potentials. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 12347-12352.	7.7	64
101	Persistently active, pacemaker-like neurons in neocortex. Frontiers in Neuroscience, 2007, 1, 123-129.	3.0	100
102	Ultrastructure of dendritic spines: correlation between synaptic and spine morphologies. Frontiers in Neuroscience, 2007, 1, 131-143.	3.0	398
103	Two-photon photostimulation and imaging of neural circuits. Nature Methods, 2007, 4, 943-950.	14.5	214
104	Modular Propagation of Epileptiform Activity: Evidence for an Inhibitory Veto in Neocortex. Journal of Neuroscience, 2006, 26, 12447-12455.	3.7	272
105	Imaging membrane potential in dendritic spines. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 786-790.	7.7	161
106	The spine neck filters membrane potentials. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 17961-17966.	7.7	211
107	Dendritic spines linearize the summation of excitatory potentials. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 18799-18804.	7.7	123
108	Dendritic Size of Pyramidal Neurons Differs among Mouse Cortical Regions. Cerebral Cortex, 2006, 16, 990-1001.	2.9	92

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109	The cortex as a central pattern generator. Nature Reviews Neuroscience, 2005, 6, 477-483.	10.0	283
110	Fluorescence microscopy today. Nature Methods, 2005, 2, 902-904.	14.5	250
111	Internal Dynamics Determine the Cortical Response to Thalamic Stimulation. Neuron, 2005, 48, 811-823.	12.8	305
112	Second harmonic imaging of membrane potential of neurons with retinal. Journal of Biomedical Optics, 2004, 9, 873.	2.7	54
113	Genesis of dendritic spines: insights from ultrastructural and imaging studies. Nature Reviews Neuroscience, 2004, 5, 24-34.	10.0	514
114	Single-shock LTD by local dendritic spikes in pyramidal neurons of mouse visual cortex. Journal of Physiology, 2004, 560, 27-36.	3.2	74
115	Dendritic spines and linear networks. Journal of Physiology (Paris), 2004, 98, 479-486.	1.8	23
116	Developmental regulation of spine and filopodial motility in primary visual cortex: Reduced effects of activity and sensory deprivation. Journal of Neurobiology, 2004, 59, 236-246.	3.9	55
117	Regulation of dendritic spine motility and stability by Rac1 and Rho kinase: evidence for two forms of spine motility*1. Molecular and Cellular Neurosciences, 2004, , .	2.2	0
118	On the electrical function of dendritic spines. Trends in Neurosciences, 2004, 27, 77-83.	13.4	81
119	Regulation of dendritic spine motility and stability by Rac1 and Rho kinase: evidence for two forms of spine motility. Molecular and Cellular Neurosciences, 2004, 26, 429-440.	2.2	220
120	Imaging the motility of dendritic protrusions and axon terminals: roles in axon sampling and synaptic competition. Molecular and Cellular Neurosciences, 2004, 27, 427-440.	2.2	60
121	Quantitative morphologic classification of layer 5 neurons from mouse primary visual cortex. Journal of Comparative Neurology, 2003, 461, 415-428.	2.1	79
122	Systematic regulation of spine sizes and densities in pyramidal neurons. Journal of Neurobiology, 2003, 56, 95-112.	3.9	110
123	Attractor dynamics of network UP states in the neocortex. Nature, 2003, 423, 283-288.	40.1	530
124	Bidirectional Regulation of Hippocampal Mossy Fiber Filopodial Motility by Kainate Receptors. Neuron, 2003, 38, 773-784.	12.8	145
125	Calcium Microdomains in Aspiny Dendrites. Neuron, 2003, 40, 807-821.	12.8	180
126	Activity-Regulated Dynamic Behavior of Early Dendritic Protrusions: Evidence for Different Types of Dendritic Filopodia. Journal of Neuroscience, 2003, 23, 7129-7142.	3.7	225

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127	Spine Motility. Neuron, 2002, 35, 1019-1027.	12.8	293
128	Calcium oscillations in neocortical astrocytes under epileptiform conditions. Journal of Neurobiology, 2002, 50, 45-55.	3.9	82
129	Multiphoton stimulation of neurons. Journal of Neurobiology, 2002, 51, 237-247.	3.9	144
130	Title is missing!. Journal of Neurocytology, 2002, 31, 337-346.	2.4	159
131	Morphological Changes in Dendritic Spines Associated with Long-Term Synaptic Plasticity. Annual Review of Neuroscience, 2001, 24, 1071-1089.	12.3	1,019
132	Stereotyped Position of Local Synaptic Targets in Neocortex. Science, 2001, 293, 868-872.	38.2	179
133	Dynamics of Spontaneous Activity in Neocortical Slices. Neuron, 2001, 32, 883-898.	12.8	262
134	Calcium imaging of epileptiform events with single-cell resolution. Journal of Neurobiology, 2001, 48, 215-227.	3.9	52
135	Analysis of spine morphological plasticity in developing hippocampal pyramidal neurons. Hippocampus, 2000, 10, 561-568.	2.6	113
136	From form to function: calcium compartmentalization in dendritic spines. Nature Neuroscience, 2000, 3, 653-659.	12.4	309
137	Regulation of Spine Calcium Dynamics by Rapid Spine Motility. Journal of Neuroscience, 2000, 20, 8262-8268.	3.7	166
138	Mechanisms of Calcium Decay Kinetics in Hippocampal Spines: Role of Spine Calcium Pumps and Calcium Diffusion through the Spine Neck in Biochemical Compartmentalization. Journal of Neuroscience, 2000, 20, 1722-1734.	3.7	199
139	Regulation of Dendritic Spine Morphology by the Rho Family of Small GTPases: Antagonistic Roles of Rac and Rho. Cerebral Cortex, 2000, 10, 927-938.	2.9	365
140	Mechanisms of Calcium Influx into Hippocampal Spines: Heterogeneity among Spines, Coincidence Detection by NMDA Receptors, and Optical Quantal Analysis. Journal of Neuroscience, 1999, 19, 1976-1987.	3.7	253
141	Linear Summation of Excitatory Inputs by CA1 Pyramidal Neurons. Neuron, 1999, 22, 383-394.	12.8	257
142	Detecting Action Potentials in Neuronal Populations with Calcium Imaging. Methods, 1999, 18, 215-221.	4.0	250
143	Input Summation by Cultured Pyramidal Neurons Is Linear and Position-Independent. Journal of Neuroscience, 1998, 18, 10-15.	3.7	342
144	Dendritic spines as basic functional units of neuronal integration. Nature, 1995, 375, 682-684.	40.1	786

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145	Ca2+ accumulations in dendrites of neocortical pyramidal neurons: An apical band and evidence for two functional compartments. Neuron, 1994, 13, 23-43.	12.8	260
146	Control of postsynaptic Ca2+ influx in developing neocortex by excitatory and inhibitory neurotransmitters. Neuron, 1991, 6, 333-344.	12.8	524
147	Simultaneous two-photon imaging and two-photon optogenetics of cortical circuits in three dimensions. ELife, 0, 7, .	1.6	138
148	Comprehensive machine learning analysis of Hydra behavior reveals a stable basal behavioral repertoire. ELife, 0, 7, .	1.6	49
149	Long-term stability of cortical ensembles. ELife, 0, 10, .	1.6	40
150	Intrinsic excitability mechanisms of neuronal ensemble formation. ELife, 0, 11, .	1.6	27
151	Aberrant hippocampal Ca2+ microwaves following synapsin-dependent adeno-associated viral expression of Ca2+ indicators. ELife, 0, 13, .	1.6	1