Earl K Miller

List of Publications by Year
in descending order

146	40,792	11608 70	12558 132
papers	citations	h-index	g-index

180	180	180	23291
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	An Integrative Theory of Prefrontal Cortex Function. Annual Review of Neuroscience, 2001, 24, 167-202.	5.0	10,240
2	Top-Down Versus Bottom-Up Control of Attention in the Prefrontal and Posterior Parietal Cortices. Science, 2007, 315, 1860-1862.	6.0	1,989
3	The prefontral cortex and cognitive control. Nature Reviews Neuroscience, 2000, 1, 59-65.	4.9	1,770
4	Neural Mechanisms of Visual Working Memory in Prefrontal Cortex of the Macaque. Journal of Neuroscience, 1996, 16, 5154-5167.	1.7	1,363
5	The importance of mixed selectivity in complex cognitive tasks. Nature, 2013, 497, 585-590.	13.7	1,262
6	A neural basis for visual search in inferior temporal cortex. Nature, 1993, 363, 345-347.	13.7	1,257
7	Categorical Representation of Visual Stimuli in the Primate Prefrontal Cortex. Science, 2001, 291, 312-316.	6.0	983
8	Single neurons in prefrontal cortex encode abstract rules. Nature, 2001, 411, 953-956.	13.7	901
9	Integration of What and Where in the Primate Prefrontal Cortex. Science, 1997, 276, 821-824.	6.0	846
10	Representation of the Quantity of Visual Items in the Primate Prefrontal Cortex. Science, 2002, 297, 1708-1711.	6.0	766
11	A neural mechanism for working and recognition memory in inferior temporal cortex. Science, 1991, 254, 1377-1379.	6.0	663
12	Different time courses of learning-related activity in the prefrontal cortex and striatum. Nature, 2005, 433, 873-876.	13.7	645
13	Gamma and Beta Bursts Underlie Working Memory. Neuron, 2016, 90, 152-164.	3.8	631
14	Responses of Neurons in Inferior Temporal Cortex During Memory-Guided Visual Search. Journal of Neurophysiology, 1998, 80, 2918-2940.	0.9	630
15	Parallel neuronal mechanisms for short-term memory. Science, 1994, 263, 520-522.	6.0	600
16	Selective representation of relevant information by neurons in the primate prefrontal cortex. Nature, 1998, 393, 577-579.	13.7	571
17	Neuronal activity in primate dorsolateral and orbital prefrontal cortex during performance of a reward preference task. European Journal of Neuroscience, 2003, 18, 2069-2081.	1.2	554
18	Neural Activity in the Primate Prefrontal Cortex during Associative Learning. Neuron, 1998, 21, 1399-1407.	3.8	542

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19	Why neurons mix: high dimensionality for higher cognition. Current Opinion in Neurobiology, 2016, 37, 66-74.	2.0	513
20	Phase-dependent neuronal coding of objects in short-term memory. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 21341-21346.	3.3	494
21	Working Memory 2.0. Neuron, 2018, 100, 463-475.	3.8	492
22	Coding of Cognitive Magnitude. Neuron, 2003, 37, 149-157.	3.8	479
23	A Comparison of Primate Prefrontal and Inferior Temporal Cortices during Visual Categorization. Journal of Neuroscience, 2003, 23, 5235-5246.	1.7	464
24	A parieto-frontal network for visual numerical information in the monkey. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7457-7462.	3.3	464
25	Task-Specific Neural Activity in the Primate Prefrontal Cortex. Journal of Neurophysiology, 2000, 84, 451-459.	0.9	423
26	Prospective Coding for Objects in Primate Prefrontal Cortex. Journal of Neuroscience, 1999, 19, 5493-5505.	1.7	397
27	Synchronous Oscillatory Neural Ensembles for Rules in the Prefrontal Cortex. Neuron, 2012, 76, 838-846.	3.8	388
28	Cortical information flow during flexible sensorimotor decisions. Science, 2015, 348, 1352-1355.	6.0	375
29	The prefrontal cortex: categories, concepts and cognition. Philosophical Transactions of the Royal Society B: Biological Sciences, 2002, 357, 1123-1136.	1.8	366
30	Object and Place Memory in the Macaque Entorhinal Cortex. Journal of Neurophysiology, 1997, 78, 1062-1081.	0.9	346
31	Dynamic Population Coding of Category Information in Inferior Temporal and Prefrontal Cortex. Journal of Neurophysiology, 2008, 100, 1407-1419.	0.9	343
32	Category Learning in the Brain. Annual Review of Neuroscience, 2010, 33, 203-219.	5.0	339
33	Neural Circuits Subserving the Retrieval and Maintenance of Abstract Rules. Journal of Neurophysiology, 2003, 90, 3419-3428.	0.9	329
34	Effects of Visual Experience on the Representation of Objects in the Prefrontal Cortex. Neuron, 2000, 27, 179-189.	3.8	327
35	From Rule to Response: Neuronal Processes in the Premotor and Prefrontal Cortex. Journal of Neurophysiology, 2003, 90, 1790-1806.	0.9	314
36	Memory fields of neurons in the primate prefrontal cortex. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 15008-15013.	3.3	258

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37	The Prefrontal Cortex. Neuron, 1999, 22, 15-17.	3.8	252
38	Neural substrates of cognitive capacity limitations. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11252-11255.	3.3	245
39	Serial, Covert Shifts of Attention during Visual Search Are Reflected by the Frontal Eye Fields and Correlated with Population Oscillations. Neuron, 2009, 63, 386-396.	3.8	238
40	Laminar recordings in frontal cortex suggest distinct layers for maintenance and control of working memory. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 1117-1122.	3.3	234
41	Suppression of visual responses of neurons in inferior temporal cortex of the awake macaque by addition of a second stimulus. Brain Research, 1993, 616, 25-29.	1.1	212
42	Working Memory: Delay Activity, Yes! Persistent Activity? Maybe Not. Journal of Neuroscience, 2018, 38, 7013-7019.	1.7	209
43	Cortical circuits for the control of attention. Current Opinion in Neurobiology, 2013, 23, 216-222.	2.0	207
44	Inferior Temporal Mechanisms for Invariant Object Recognition. Cerebral Cortex, 1994, 4, 523-531.	1.6	204
45	Visual Categorization and the Primate Prefrontal Cortex: Neurophysiology and Behavior. Journal of Neurophysiology, 2002, 88, 929-941.	0.9	203
46	Gamma and beta bursts during working memory readout suggest roles in its volitional control. Nature Communications, 2018, 9, 394.	5.8	203
47	Experience-Dependent Sharpening of Visual Shape Selectivity in Inferior Temporal Cortex. Cerebral Cortex, 2005, 16, 1631-1644.	1.6	189
48	A Comparison of Abstract Rules in the Prefrontal Cortex, Premotor Cortex, Inferior Temporal Cortex, and Striatum. Journal of Cognitive Neuroscience, 2006, 18, 974-989.	1.1	189
49	Dynamics of neuronal sensitivity in visual cortex and local feature discrimination. Nature Neuroscience, 2002, 5, 883-891.	7.1	185
50	Learning Substrates in the Primate Prefrontal Cortex and Striatum: Sustained Activity Related to Successful Actions. Neuron, 2009, 63, 244-253.	3.8	173
51	Representation of Multiple, Independent Categories in the Primate Prefrontal Cortex. Neuron, 2010, 66, 796-807.	3.8	161
52	A Neural Circuit Model of Flexible Sensorimotor Mapping: Learning and Forgetting on Multiple Timescales. Neuron, 2007, 54, 319-333.	3.8	159
53	Frequency-specific hippocampal-prefrontal interactions during associative learning. Nature Neuroscience, 2015, 18, 576-581.	7.1	159
54	Functional interactions among neurons in inferior temporal cortex of the awake macaque. Experimental Brain Research, 1991, 84, 505-16.	0.7	158

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55	Neural correlates of categories and concepts. Current Opinion in Neurobiology, 2003, 13, 198-203.	2.0	158
56	Task-Dependent Changes in Short-Term Memory in the Prefrontal Cortex. Journal of Neuroscience, 2010, 30, 15801-15810.	1.7	158
57	Habituation-like decrease in the responses of neurons in inferior temporal cortex of the macaque. Visual Neuroscience, 1991, 7, 357-362.	0.5	149
58	Prefrontal Cortex Activity during Flexible Categorization. Journal of Neuroscience, 2010, 30, 8519-8528.	1.7	135
59	Increases in Functional Connectivity between Prefrontal Cortex and Striatum during Category Learning. Neuron, 2014, 83, 216-225.	3.8	133
60	Layer and rhythm specificity for predictive routing. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 31459-31469.	3.3	133
61	Differences between Neural Activity in Prefrontal Cortex and Striatum during Learning of Novel Abstract Categories. Neuron, 2011, 71, 243-249.	3.8	121
62	The Role of Prefrontal Dopamine D1 Receptors in the Neural Mechanisms of Associative Learning. Neuron, 2012, 74, 874-886.	3.8	120
63	Analog Numerical Representations in Rhesus Monkeys: Evidence for Parallel Processing. Journal of Cognitive Neuroscience, 2004, 16, 889-901.	1.1	104
64	Prefrontal dopamine in associative learning and memory. Neuroscience, 2014, 282, 217-229.	1.1	102
65	Social Neuroscience: Progress and Implications for Mental Health. Perspectives on Psychological Science, 2007, 2, 99-123.	5.2	98
66	Timecourse of object-related neural activity in the primate prefrontal cortex during a short-term memory task. European Journal of Neuroscience, 2002, 15, 1244-1254.	1.2	96
67	The Representation of Multiple Objects in Prefrontal Neuronal Delay Activity. Cerebral Cortex, 2007, 17, i41-i50.	1.6	96
68	Goal-direction and top-down control. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130471.	1.8	90
69	ETHICS: Moral Issues of Human-Non-Human Primate Neural Grafting. Science, 2005, 309, 385-386.	6.0	89
70	Task Dependence of Visual and Category Representations in Prefrontal and Inferior Temporal Cortices. Journal of Neuroscience, 2014, 34, 16065-16075.	1.7	81
71	Neural mechanisms of visual categorization: Insights from neurophysiology. Neuroscience and Biobehavioral Reviews, 2008, 32, 311-329.	2.9	79
72	Neural effects of propofol-induced unconsciousness and its reversal using thalamic stimulation. ELife, 2021, 10, .	2.8	73

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73	Synchronous beta rhythms of frontoparietal networks support only behaviorally relevant representations. ELife, 2016, 5, .	2.8	72
74	Neural Substrates of Dopamine D2 Receptor Modulated Executive Functions in the Monkey Prefrontal Cortex. Cerebral Cortex, 2015, 25, 2980-2987.	1.6	71
75	Stimulus Load and Oscillatory Activity in Higher Cortex. Cerebral Cortex, 2016, 26, 3772-3784.	1.6	71
76	Different Levels of Category Abstraction by Different Dynamics in Different Prefrontal Areas. Neuron, 2018, 97, 716-726.e8.	3.8	69
77	Extracellular Spike Waveform Dissociates Four Functionally Distinct Cell Classes in Primate Cortex. Current Biology, 2019, 29, 2973-2982.e5.	1.8	67
78	All My Circuits: Using Multiple Electrodes to Understand Functioning Neural Networks. Neuron, 2008, 60, 483-488.	3.8	66
79	Shifting the Spotlight of Attention: Evidence for Discrete Computations in Cognition. Frontiers in Human Neuroscience, 2010, 4, 194.	1.0	64
80	Gradual progression from sensory to task-related processing in cerebral cortex. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E7202-E7211.	3.3	62
81	Task-evoked activity quenches neural correlations and variability across cortical areas. PLoS Computational Biology, 2020, 16, e1007983.	1.5	62
82	The Prefrontal Cortex: No Simple Matter. NeuroImage, 2000, 11, 447-450.	2.1	61
83	Scopolamine affects short-term memory but not inferior temporal neurons. NeuroReport, 1993, 4, 81.	0.6	59
84	V1 Neurons Signal Acquisition of an Internal Representation of Stimulus Location. Science, 2003, 300, 1758-1763.	6.0	52
85	Compressed Timeline of Recent Experience in Monkey Lateral Prefrontal Cortex. Journal of Cognitive Neuroscience, 2018, 30, 935-950.	1.1	52
86	Microstimulation of Frontal Cortex Can Reorder a Remembered Spatial Sequence. PLoS Biology, 2006, 4, e134.	2.6	50
87	A neural model of sequential movement planning and control of eye movements: Item-Order-Rank working memory and saccade selection by the supplementary eye fields. Neural Networks, 2012, 26, 29-58.	3.3	46
88	Cognitive Focus through Adaptive Neural Coding in the Primate Prefrontal Cortex. , 2002, , 278-291.		46
89	Hebbian Learning in a Random Network Captures Selectivity Properties of the Prefrontal Cortex. Journal of Neuroscience, 2017, 37, 11021-11036.	1.7	38
90	Comparison of Primate Prefrontal and Premotor Cortex Neuronal Activity during Visual Categorization. Journal of Cognitive Neuroscience, 2011, 23, 3355-3365.	1.1	37

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91	Traveling waves in the prefrontal cortex during working memory. PLoS Computational Biology, 2022, 18, e1009827.	1.5	37
92	Prefrontal Cortex Networks Shift from External to Internal Modes during Learning. Journal of Neuroscience, 2016, 36, 9739-9754.	1.7	36
93	Preservation and Changes in Oscillatory Dynamics across the Cortical Hierarchy. Journal of Cognitive Neuroscience, 2020, 32, 2024-2035.	1.1	36
94	PFC Neurons Reflect Categorical Decisions about Ambiguous Stimuli. Journal of Cognitive Neuroscience, 2014, 26, 1283-1291.	1.1	35
95	The â€œworkingâ€• of working memory. Dialogues in Clinical Neuroscience, 2013, 15, 411-418.	1.8	35
96	Working Memory Capacity: Limits on the Bandwidth of Cognition. Daedalus, 2015, 144, 112-122.	0.9	32
97	Targeting Cognition and Networks Through Neural Oscillations. JAMA Psychiatry, 2019, 76, 671.	6.0	31
98	A Meta-Analysis Suggests Different Neural Correlates for Implicit and Explicit Learning. Neuron, 2017, 96, 521-534.e7.	3.8	29
99	Conjunctive representation of what and when in monkey hippocampus and lateral prefrontal cortex during an associative memory task. Hippocampus, 2020, 30, 1332-1346.	0.9	29
100	Interhemispheric transfer of working memories. Neuron, 2021, 109, 1055-1066.e4.	3.8	27
101	Low-Beta Oscillations Turn Up the Gain During Category Judgments. Cerebral Cortex, 2018, 28, 116-130.	1.6	26
102	Monkey EEG links neuronal color and motion information across species and scales. ELife, 2019, 8, .	2.8	24
103	Neural ensemble states in prefrontal cortex identified using a hidden Markov model with a modified EM algorithm. Neurocomputing, 2000, 32-33, 961-966.	3.5	23
104	Rapid Association Learning in the Primate Prefrontal Cortex in the Absence of Behavioral Reversals. Journal of Cognitive Neuroscience, 2011, 23, 1823-1828.	1.1	23
105	Prefrontal oscillations modulate the propagation of neuronal activity required for working memory. Neurobiology of Learning and Memory, 2020, 173, 107228.	1.0	23
106	On the Role of Cortex-Basal Ganglia Interactions for Category Learning: A Neurocomputational Approach. Journal of Neuroscience, 2018, 38, 9551-9562.	1.7	22
107	Working Memory Load Modulates Neuronal Coupling. Cerebral Cortex, 2019, 29, 1670-1681.	1.6	22
108	Limber Neurons for a Nimble Mind. Neuron, 2013, 78, 211-213.	3.8	19

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109	Beyond dimension reduction: Stable electric fields emerge from and allow representational drift. NeuroImage, 2022, 253, 119058.	2.1	19
110	A call for more clarity around causality in neuroscience. Trends in Neurosciences, 2022, 45, 654-655.	4.2	18
111	Achieving stable dynamics in neural circuits. PLoS Computational Biology, 2020, 16, e1007659.	1.5	17
112	Ventral Capsule/Ventral Striatum Deep Brain Stimulation Does Not Consistently Diminish Occipital Cross-Frequency Coupling. Biological Psychiatry, 2016, 80, e59-e60.	0.7	15
113	Current Opinion in Neurobiologyâ€"Cognitive Neuroscience 2010. Current Opinion in Neurobiology, 2010, 20, 141-142.	2.0	14
114	Organization through experience. Nature Neuroscience, 2000, 3, 1066-1068.	7.1	13
115	Neurodynamics of the Prefrontal Cortex during Conditional Visuomotor Associations. Journal of Cognitive Neuroscience, 2008, 20, 421-431.	1.1	13
116	A hidden Markov model reliably characterizes ketamine-induced spectral dynamics in macaque local field potentials and human electroencephalograms. PLoS Computational Biology, 2021, 17, e1009280.	1.5	13
117	Decoding of intended saccade direction in an oculomotor brainâ€"computer interface. Journal of Neural Engineering, 2017, 14, 046007.	1.8	12
118	On memories, neural ensembles and mental flexibility. NeuroImage, 2017, 157, 297-313.	2.1	11
119	Altering alpha-frequency brain oscillations with rapid analog feedback-driven neurostimulation. PLoS ONE, 2018, 13, e0207781.	1.1	11
120	Rules through Recursion: How Interactions between the Frontal Cortex and Basal Ganglia May Build Abstract, Complex Rules from Concrete, Simple Ones. , 2007, , 419-440.		11
121	Propofol Anesthesia Alters Cortical Traveling Waves. Journal of Cognitive Neuroscience, 2022, 34, 1274-1286.	1.1	10
122	Straight from the top. Nature, 1999, 401, 650-651.	13.7	8
123	Detecting multivariate cross-correlation between brain regions. Journal of Neurophysiology, 2018, 120, 1962-1972.	0.9	7
124	Sensory processing and categorization in cortical and deep neural networks. NeuroImage, 2019, 202, 116118.	2.1	7
125	Bayesian Modelling of Induced Responses and Neuronal Rhythms. Brain Topography, 2019, 32, 569-582.	0.8	7
126	The Prefrontal Cortex and Executive Brain Functions. , 2013, , 1069-1089.		6

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127	Differences in visually induced MEG oscillations reflect differences in deep cortical layer activity. Communications Biology, 2020, 3, 707.	2.0	4
128	A Geometric Characterization of Population Coding in the Prefrontal Cortex and Hippocampus during a Paired-Associate Learning Task. Journal of Cognitive Neuroscience, 2020, 32, 1455-1465.	1.1	4
129	Neocortical memory traces. Behavioral and Brain Sciences, 1994, 17, 488-489.	0.4	2
130	The Prefrontal Cortex: Categories, Concepts, and Cognitive Control. Research and Perspectives in Neurosciences, 2007, , 137-154.	0.4	2
131	Bootstrapping your brain. , 2007, , 339-354.		1
132	Earl K. Miller. Neuron, 2017, 95, 1237-1239.	3.8	1
133	102. Modulating Top-Down Executive Control Networks with Striatal Deep Brain Stimulation. Biological Psychiatry, 2017, 81, S43.	0.7	1
134	Hebbian-inspired rewiring of a random network replicates pattern of selectivity seen in PFC. BMC Neuroscience, 2014, 15, .	0.8	0
135	Charles Gordon Gross (1936â€"2019). Neuron, 2019, 102, 721-723.	3.8	0
136	Compressed Timeline of Recent Experience in Monkey lPFC. SSRN Electronic Journal, 0, , .	0.4	0
137	Task-evoked activity quenches neural correlations and variability across cortical areas. , 2020, 16, e1007983.		0
138	Task-evoked activity quenches neural correlations and variability across cortical areas. , 2020, 16, e1007983.		0
139	Task-evoked activity quenches neural correlations and variability across cortical areas. , 2020, 16, e1007983.		0
140	Task-evoked activity quenches neural correlations and variability across cortical areas. , 2020, 16, e1007983.		0
141	Task-evoked activity quenches neural correlations and variability across cortical areas. , 2020, 16, e1007983.		0
142	Task-evoked activity quenches neural correlations and variability across cortical areas. , 2020, 16, e1007983.		0
143	Achieving stable dynamics in neural circuits. , 2020, 16, e1007659.		0
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145	Achieving stable dynamics in neural circuits. , 2020, 16, e1007659.		0
146	Achieving stable dynamics in neural circuits. , 2020, 16, e1007659.		0