

# Mathew E Diamond

## List of Publications by Year in descending order

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106  
papers

8,822  
citations

53794

45  
h-index

45317

90  
g-index

115  
all docs

115  
docs citations

115  
times ranked

5887  
citing authors

#	ARTICLE	IF	CITATIONS
1	Primary Motor and Sensory Cortex Activation during Motor Performance and Motor Imagery: A Functional Magnetic Resonance Imaging Study. <i>Journal of Neuroscience</i> , 1996, 16, 7688-7698.	3.6	788
2	'Where' and 'what' in the whisker sensorimotor system. <i>Nature Reviews Neuroscience</i> , 2008, 9, 601-612.	10.2	534
3	The Role of Spike Timing in the Coding of Stimulus Location in Rat Somatosensory Cortex. <i>Neuron</i> , 2001, 29, 769-777.	8.1	382
4	Active sensation: insights from the rodent vibrissa sensorimotor system. <i>Current Opinion in Neurobiology</i> , 2006, 16, 435-444.	4.2	347
5	Laminar comparison of somatosensory cortical plasticity. <i>Science</i> , 1994, 265, 1885-1888.	12.6	338
6	Posterior parietal cortex represents sensory history and mediates its effects on behaviour. <i>Nature</i> , 2018, 554, 368-372.	27.8	302
7	Experience-dependent plasticity in adult rat barrel cortex.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1993, 90, 2082-2086.	7.1	272
8	Transient Storage of a Tactile Memory Trace in Primary Somatosensory Cortex. <i>Journal of Neuroscience</i> , 2002, 22, 8720-8725.	3.6	270
9	Neuronal Encoding of Texture in the Whisker Sensory Pathway. <i>PLoS Biology</i> , 2005, 3, e17.	5.6	248
10	Somatic sensory responses in the rostral sector of the posterior group (POm) and in the ventral posterior medial nucleus (VPM) of the rat thalamus. <i>Journal of Comparative Neurology</i> , 1992, 318, 462-476.	1.6	241
11	Somatic sensory responses in the rostral sector of the posterior group (POm) and in the ventral posterior medial nucleus (VPM) of the rat thalamus: Dependence on the barrel field cortex. <i>Journal of Comparative Neurology</i> , 1992, 319, 66-84.	1.6	221
12	Population Coding of Stimulus Location in Rat Somatosensory Cortex. <i>Neuron</i> , 2001, 32, 503-514.	8.1	219
13	Shifts in Coding Properties and Maintenance of Information Transmission during Adaptation in Barrel Cortex. <i>PLoS Biology</i> , 2007, 5, e19.	5.6	207
14	Active touch sensing. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2011, 366, 2989-2995.	4.0	186
15	Neuronal Activity in Rat Barrel Cortex Underlying Texture Discrimination. <i>PLoS Biology</i> , 2007, 5, e305.	5.6	162
16	An innocuous bias in whisker use in adult rats modifies receptive fields of barrel cortex neurons. <i>Journal of Neuroscience</i> , 1994, 14, 6978-6991.	3.6	157
17	Encoding of Whisker Vibration by Rat Barrel Cortex Neurons: Implications for Texture Discrimination. <i>Journal of Neuroscience</i> , 2003, 23, 9146-9154.	3.6	152
18	Deciphering the Spike Train of a Sensory Neuron: Counts and Temporal Patterns in the Rat Whisker Pathway. <i>Journal of Neuroscience</i> , 2006, 26, 9216-9226.	3.6	150

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19	Complementary Contributions of Spike Timing and Spike Rate to Perceptual Decisions in Rat S1 and S2 Cortex. <i>Current Biology</i> , 2015, 25, 357-363.	3.9	142
20	Whisker Vibration Information Carried by Rat Barrel Cortex Neurons. <i>Journal of Neuroscience</i> , 2004, 24, 6011-6020.	3.6	136
21	Neural Coding: Higher-Order Temporal Patterns in the Neurostatistics of Cell Assemblies. <i>Neural Computation</i> , 2000, 12, 2621-2653.	2.2	127
22	Whisker sensory system “ From receptor to decision. <i>Progress in Neurobiology</i> , 2013, 103, 28-40.	5.7	117
23	Spatial“Temporal Distribution of Whisker-Evoked Activity in Rat Somatosensory Cortex and the Coding of Stimulus Location. <i>Journal of Neuroscience</i> , 2000, 20, 6135-6143.	3.6	116
24	Demonstration of discrete place-defined columns?segregates?in the cat SI. <i>Journal of Comparative Neurology</i> , 1990, 298, 97-112.	1.6	114
25	The Topography of Tactile Working Memory. <i>Journal of Neuroscience</i> , 2001, 21, 8262-8269.	3.6	106
26	Somatosensory cortical neuronal population activity across states of anaesthesia. <i>European Journal of Neuroscience</i> , 2002, 15, 744-752.	2.6	103
27	Texture Signals in Whisker Vibrations. <i>Journal of Neurophysiology</i> , 2006, 95, 1792-1799.	1.8	103
28	Distribution of tactile learning and its neural basis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1999, 96, 7587-7591.	7.1	101
29	The Topography of Tactile Learning in Humans. <i>Journal of Neuroscience</i> , 2001, 21, 1056-1061.	3.6	98
30	The impact of high-order interactions on the rate of synchronous discharge and information transmission in somatosensory cortex. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2009, 367, 3297-3310.	3.4	94
31	Population coding in somatosensory cortex. <i>Current Opinion in Neurobiology</i> , 2002, 12, 441-447.	4.2	86
32	Tactile perception and working memory in rats and humans. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 2331-2336.	7.1	86
33	Unsupervised quantification of whisking and head movement in freely moving rodents. <i>Journal of Neurophysiology</i> , 2011, 105, 1950-1962.	1.8	81
34	Experience-dependent Plasticity of Rat Barrel Cortex: Redistribution of Activity across Barrel-columns. <i>Cerebral Cortex</i> , 2000, 10, 23-31.	2.9	78
35	Supralinear and Supramodal Integration of Visual and Tactile Signals in Rats: Psychophysics and Neuronal Mechanisms. <i>Neuron</i> , 2018, 97, 626-639.e8.	8.1	72
36	Coherence between Rat Sensorimotor System and Hippocampus Is Enhanced during Tactile Discrimination. <i>PLoS Biology</i> , 2016, 14, e1002384.	5.6	68

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37	Hippocampal Representation of Touch-Guided Behavior in Rats: Persistent and Independent Traces of Stimulus and Reward Location. PLoS ONE, 2011, 6, e16462.	2.5	67
38	Integration of Multiple-whisker Inputs in Rat Somatosensory Cortex. Cerebral Cortex, 2001, 11, 164-170.	2.9	64
39	Whisker-Mediated Texture Discrimination. PLoS Biology, 2008, 6, e220.	5.6	64
40	Evidence for a mosaic representation of the body surface in area 3b of the somatic cortex of cat.. Proceedings of the National Academy of Sciences of the United States of America, 1987, 84, 6606-6610.	7.1	62
41	Whisking and whisker kinematics during a texture classification task. Philosophical Transactions of the Royal Society B: Biological Sciences, 2011, 366, 3058-3069.	4.0	60
42	Behavioral study of whisker-mediated vibration sensation in rats. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 971-976.	7.1	60
43	Coordinated Population Activity Underlying Texture Discrimination in Rat Barrel Cortex. Journal of Neuroscience, 2013, 33, 5843-5855.	3.6	59
44	Somatosensory Thalamus of the Rat. Cerebral Cortex, 1995, , 189-219.	0.6	57
45	Contribution of Supragranular Layers to Sensory Processing and Plasticity in Adult Rat Barrel Cortex. Journal of Neurophysiology, 1998, 80, 3261-3271.	1.8	51
46	Transformation of Perception from Sensory to Motor Cortex. Current Biology, 2017, 27, 1585-1596.e6.	3.9	50
47	Information-theoretic methods for studying population codes. Neural Networks, 2010, 23, 713-727.	5.9	48
48	Decoding Neuronal Population Activity in Rat Somatosensory Cortex: Role of Columnar Organization. Cerebral Cortex, 2003, 13, 45-52.	2.9	47
49	Sound sensitivity of neurons in rat hippocampus during performance of a sound-guided task. Journal of Neurophysiology, 2012, 107, 1822-1834.	1.8	47
50	Learning through maps: Functional significance of topographic organization in primary sensory cortex. Journal of Neurobiology, 1999, 41, 64-68.	3.6	44
51	Texture sensation through the fingertips and the whiskers. Current Opinion in Neurobiology, 2010, 20, 319-327.	4.2	44
52	Reading spike timing without a clock: intrinsic decoding of spike trains. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20120467.	4.0	44
53	"Information carried by population spike times in the whisker sensory cortex can be decoded without knowledge of stimulus time ". Frontiers in Synaptic Neuroscience, 2010, 2, 17.	2.5	42
54	Dynamic synaptic modification threshold: computational model of experience-dependent plasticity in adult rat barrel cortex.. Proceedings of the National Academy of Sciences of the United States of America, 1994, 91, 4791-4795.	7.1	41

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55	Examination of the spatial and temporal distribution of sensory cortical activity using a 100-electrode array. <i>Journal of Neuroscience Methods</i> , 1999, 90, 57-66.	2.5	41
56	Ipsilateral and contralateral transfer of tactile learning. <i>NeuroReport</i> , 2000, 11, 263-266.	1.2	41
57	The Cortical Distribution of Sensory Memories. <i>Neuron</i> , 2001, 30, 315-318.	8.1	40
58	Naive Bayes texture classification applied to whisker data from a moving robot. , 2010, , .		39
59	Enhanced Response of Neurons in Rat Somatosensory Cortex to Stimuli Containing Temporal Noise. <i>Cerebral Cortex</i> , 2008, 18, 1085-1093.	2.9	38
60	Optimal decision-making in mammals: insights from a robot study of rodent texture discrimination. <i>Journal of the Royal Society Interface</i> , 2012, 9, 1517-1528.	3.4	38
61	Factors Affecting Frequency Discrimination of Vibrotactile Stimuli: Implications for Cortical Encoding. <i>PLoS ONE</i> , 2006, 1, e100.	2.5	38
62	The role of individual spikes and spike patterns in population coding of stimulus location in rat somatosensory cortex. <i>BioSystems</i> , 2002, 67, 187-193.	2.0	37
63	Sensory Prioritization in Rats: Behavioral Performance and Neuronal Correlates. <i>Journal of Neuroscience</i> , 2016, 36, 3243-3253.	3.6	34
64	Algorithms of whisker-mediated touch perception. <i>Current Opinion in Neurobiology</i> , 2014, 25, 176-186.	4.2	32
65	White matter structure and myelin-related gene expression alterations with experience in adult rats. <i>Progress in Neurobiology</i> , 2020, 187, 101770.	5.7	30
66	Neuronal Correlates of Tactile Working Memory in Prefrontal and Vibrissal Somatosensory Cortex. <i>Cell Reports</i> , 2019, 27, 3167-3181.e5.	6.4	29
67	State-Dependent Changes in Perception and Coding in the Mouse Somatosensory Cortex. <i>Cell Reports</i> , 2020, 32, 108197.	6.4	28
68	Correlated physiological and perceptual effects of noise in a tactile stimulus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 7981-7986.	7.1	24
69	Extracting information in spike time patterns with wavelets and information theory. <i>Journal of Neurophysiology</i> , 2015, 113, 1015-1033.	1.8	24
70	Auditory stimuli elicit hippocampal neuronal responses during sleep. <i>Frontiers in Systems Neuroscience</i> , 2012, 6, 49.	2.5	22
71	Rats Generate Vibrissal Sensory Evidence until Boundary Crossing Triggers a Decision. <i>Current Biology</i> , 2019, 29, 1415-1424.e5.	3.9	21
72	Conserved visual capacity of rats under red light. <i>ELife</i> , 2021, 10, .	6.0	21

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73	Time coding in rat dorsolateral striatum. <i>Neuron</i> , 2021, 109, 3663-3673.e6.	8.1	21
74	Rapid Fluctuations in Rat Barrel Cortex Plasticity. <i>Journal of Neuroscience</i> , 2004, 24, 5931-5941.	3.6	20
75	Spike-timing in primary sensory neurons: a model of somatosensory transduction in the rat. <i>Biological Cybernetics</i> , 2008, 98, 185-194.	1.3	20
76	Texture Identification by Bounded Integration of Sensory Cortical Signals. <i>Current Biology</i> , 2019, 29, 1425-1435.e5.	3.9	20
77	Investigations into the organization of information in sensory cortex. <i>Journal of Physiology (Paris)</i> , 2003, 97, 529-536.	2.1	19
78	Learning through maps: functional significance of topographic organization in primary sensory cortex. <i>Journal of Neurobiology</i> , 1999, 41, 64-8.	3.6	18
79	Redundancy and synergy arising from pairwise correlations in neuronal ensembles. <i>Journal of Computational Neuroscience</i> , 2002, 12, 165-174.	1.0	17
80	A sensory integration account for time perception. <i>PLoS Computational Biology</i> , 2021, 17, e1008668.	3.2	15
81	Feeling for space or for time: Task-dependent modulation of the cortical representation of identical vibrotactile stimuli. <i>Neuroscience Letters</i> , 2010, 480, 143-147.	2.1	13
82	Dynamics of history-dependent perceptual judgment. <i>Nature Communications</i> , 2021, 12, 6036.	12.8	12
83	Effect of developmental sensory and motor deprivation on the functional organization of adult rat somatosensory cortex. <i>Brain Research Bulletin</i> , 2003, 60, 373-386.	3.0	11
84	When Outgoing and Incoming Signals Meet: New Insights from the Zona Incerta. <i>Neuron</i> , 2007, 56, 578-579.	8.1	11
85	On the presence of high-order interactions among somatosensory neurons and their effect on information transmission. <i>Journal of Physics: Conference Series</i> , 2009, 197, 012013.	0.4	10
86	Computational study of experience-dependent plasticity in adult rat cortical barrel-column. <i>Network: Computation in Neural Systems</i> , 1999, 10, 303-323.	3.6	8
87	Dye-enhanced visualization of rat whiskers for behavioral studies. <i>ELife</i> , 2017, 6, .	6.0	8
88	Parallel sensing. <i>Nature</i> , 2000, 406, 245-247.	27.8	7
89	Effect of tactile stimulus frequency on time perception: the role of working memory. <i>Experimental Brain Research</i> , 2008, 185, 623-633.	1.5	7
90	Making sense of sensory evidence in the rat whisker system. <i>Current Opinion in Neurobiology</i> , 2020, 60, 76-83.	4.2	7

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91	Coding of stimulus location by spike timing in rat somatosensory cortex. <i>Neurocomputing</i> , 2002, 44-46, 573-578.	5.9	6
92	Perceptual uncertainty. <i>PLoS Biology</i> , 2019, 17, e3000430.	5.6	6
93	Spine Surgery in Italy in the COVID-19 Era: Proposal for Assessing and Responding to the Regional State of Emergency. <i>World Neurosurgery</i> , 2021, 145, e1-e6.	1.3	6
94	Computational study of experience-dependent plasticity in adult rat cortical barrel-column. <i>Network: Computation in Neural Systems</i> , 1999, 10, 303-323.	3.6	4
95	Response to: Ritt et al., "Embodied Information Processing: Vibrissa Mechanics and Texture Features Shape Micromotions in Actively Sensing Rats." <i>Neuron</i> 57, 599-613. <i>Neuron</i> , 2008, 60, 743-744.	8.1	2
96	Topological clustering of synchronous spike trains. , 2008, , .		2
97	Sensation of a "Noisy" Whisker Vibration in Rats. <i>Lecture Notes in Computer Science</i> , 2012, , 341-342.	1.3	1
98	Learning not to feel: reshaping the resolution of tactile perception. <i>Frontiers in Systems Neuroscience</i> , 2013, 7, 29.	2.5	1
99	Identifying what makes a neuron fire. <i>Journal of Physiology</i> , 2019, 597, 2607-2608.	2.9	1
100	Functional Principles of Whisker-Mediated Touch Perception. , 2015, , 169-193.		1
101	A Fluorescent Dye Method Suitable for Visualization of One or More Rat Whiskers. <i>Bio-protocol</i> , 2018, 8, e2749.	0.4	1
102	Hippocampal population dynamics underlying memory trace activation in a tactile classification task. <i>BMC Neuroscience</i> , 2011, 12, .	1.9	0
103	Spike timing in rat somatosensory cortex contributes to behavior. <i>BMC Neuroscience</i> , 2013, 14, .	1.9	0
104	Hierarchical flow of sensory information in rat somatosensory cortex. <i>BMC Neuroscience</i> , 2014, 15, .	1.9	0
105	Neuronal Encoding of Natural Stimuli: The Rat Tactile System. <i>Novartis Foundation Symposium</i> , 0, , 18-37.	1.1	0
106	Neuronal encoding of natural stimuli: the rat tactile system. <i>Novartis Foundation Symposium</i> , 2006, 270, 18-31; discussion 31-7, 51-8.	1.1	0