Kathleen E Cullen

List of Publications by Year
in descending order

137 papers	8,058 citations	53794 45 h-index	58581 82 g-index
215 all docs	215 docs citations	215 times ranked	4328 citing authors

#	Article	IF	Citations
1	Vestibular System: The Many Facets of a Multimodal Sense. Annual Review of Neuroscience, 2008, 31, 125-150.	10.7	729
2	The vestibular system: multimodal integration and encoding of self-motion for motor control. Trends in Neurosciences, 2012, 35, 185-196.	8.6	453
3	Consensus Paper: The Role of the Cerebellum in Perceptual Processes. Cerebellum, 2015, 14, 197-220.	2.5	355
4	Sensory signals during active versus passive movement. Current Opinion in Neurobiology, 2004, 14, 698-706.	4.2	226
5	Neural Variability, Detection Thresholds, and Information Transmission in the Vestibular System. Journal of Neuroscience, 2007, 27, 771-781.	3.6	217
6	Dissociating Self-Generated from Passively Applied Head Motion: Neural Mechanisms in the Vestibular Nuclei. Journal of Neuroscience, 2004, 24, 2102-2111.	3.6	206
7	Selective Processing of Vestibular Reafference during Self-Generated Head Motion. Journal of Neuroscience, 2001, 21, 2131-2142.	3.6	201
8	Quantitative Analysis of Abducens Neuron Discharge Dynamics During Saccadic and Slow Eye Movements. Journal of Neurophysiology, 1999, 82, 2612-2632.	1.8	171
9	Learning to expect the unexpected: rapid updating in primate cerebellum during voluntary self-motion. Nature Neuroscience, 2015, 18, 1310-1317.	14.8	170
10	Signal Processing in the Vestibular System During Active Versus Passive Head Movements. Journal of Neurophysiology, 2004, 91, 1919-1933.	1.8	163
11	Our sense of direction: progress, controversies and challenges. Nature Neuroscience, 2017, 20, 1465-1473.	14.8	154
12	Vestibular processing during natural self-motion: implications for perception and action. Nature Reviews Neuroscience, 2019, 20, 346-363.	10.2	151
13	Response of Vestibular-Nerve Afferents to Active and Passive Rotations Under Normal Conditions and After Unilateral Labyrinthectomy. Journal of Neurophysiology, 2007, 97, 1503-1514.	1.8	146
14	Vestibuloocular Reflex Dynamics During High-Frequency and High-Acceleration Rotations of the Head on Body in Rhesus Monkey. Journal of Neurophysiology, 2002, 88, 13-28.	1.8	140
15	A neural correlate for vestibulo-ocular reflex suppression during voluntary eyeâ€“head gaze shifts. Nature Neuroscience, 1998, 1, 404-410.	14.8	138
16	The Primate Cerebellum Selectively Encodes Unexpected Self-Motion. Current Biology, 2013, 23, 947-955.	3.9	118
17	Vestibuloocular Reflex Signal Modulation During Voluntary and Passive Head Movements. Journal of Neurophysiology, 2002, 87, 2337-2357.	1.8	112
18	Vestibular control of the head: possible functions of the vestibulocollic reflex. Experimental Brain Research, 2011, 210, 331-345.	1.5	102

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19	Semicircular Canal Afferents Similarly Encode Active and Passive Head-On-Body Rotations: Implications for the Role of Vestibular Efference. Journal of Neuroscience, 2002, 22, RC226-RC226.	3.6	100
20	Statistics of the Vestibular Input Experienced during Natural Self-Motion: Implications for Neural Processing. Journal of Neuroscience, 2014, 34, 8347-8357.	3.6	98
21	Multimodal Integration in Rostral Fastigial Nucleus Provides an Estimate of Body Movement. Journal of Neuroscience, 2009, 29, 10499-10511.	3.6	94
22	Response of Vestibular Nerve Afferents Innervating Utricle and Saccule During Passive and Active Translations. Journal of Neurophysiology, 2009, 101, 141-149.	1.8	88
23	4-aminopyridine reverses ataxia and cerebellar firing deficiency in a mouse model of spinocerebellar ataxia type 6. Scientific Reports, 2016, 6, 29489.	3.3	82
24	The use of system identification techniques in the analysis of oculomotor burst neuron spike train dynamics. Journal of Computational Neuroscience, 1996, 3, 347-368.	1.0	78
25	Analysis of Primate IBN Spike Trains Using System Identification Techniques. I. Relationship to Eye Movement Dynamics During Head-Fixed Saccades. Journal of Neurophysiology, 1997, 78, 3259-3282.	1.8	78
26	Neural Correlates of Sensory Substitution in Vestibular Pathways following Complete Vestibular Loss. Journal of Neuroscience, 2012, 32, 14685-14695.	3.6	78
27	Neural substrates, dynamics and thresholds of galvanic vestibular stimulation in the behaving primate. Nature Communications, 2019, 10, 1904.	12.8	76
28	Neural substrates underlying vestibular compensation: Contribution of peripheral versus central processing. Journal of Vestibular Research: Equilibrium and Orientation, 2010, 19, 171-182.	2.0	75
29	Neural Correlates of Motor Learning in the Vestibulo-Ocular Reflex: Dynamic Regulation of Multimodal Integration in the Macaque Vestibular System. Journal of Neuroscience, 2010, 30, 10158-10168.	3.6	75
30	The neural encoding of self-motion. Current Opinion in Neurobiology, 2011, 21, 587-595.	4.2	72
31	Multimodal Integration After Unilateral Labyrinthine Lesion: Single Vestibular Nuclei Neuron Responses and Implications for Postural Compensation. Journal of Neurophysiology, 2011, 105, 661-673.	1.8	72
32	Brainstem processing of vestibular sensory exafference: implications for motion sickness etiology. Experimental Brain Research, 2014, 232, 2483-2492.	1.5	71
33	Internal models of self-motion: computations that suppress vestibular reafference in early vestibular processing. Experimental Brain Research, 2011, 210, 377-388.	1.5	67
34	Information transmission and detection thresholds in the vestibular nuclei: single neurons vs. population encoding. Journal of Neurophysiology, 2011, 105, 1798-1814.	1.8	66
35	Multimodal Integration of Self-Motion Cues in the Vestibular System: Active versus Passive Translations. Journal of Neuroscience, 2013, 33, 19555-19566.	3.6	66
36	Discharge Dynamics of Oculomotor Neural Integrator Neurons During Conjugate and Disjunctive Saccades and Fixation. Journal of Neurophysiology, 2003, 90, 739-754.	1.8	63

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37	Dynamics of the horizontal vestibuloocular reflex after unilateral labyrinthectomy: response to high frequency, high acceleration, and high velocity rotations. Experimental Brain Research, 2006, 175, 471-484.	1.5	62
38	The statistics of the vestibular input experienced during natural selfâ€motion differ between rodents and primates. Journal of Physiology, 2017, 595, 2751-2766.	2.9	62
39	The neural control of fast vs. slow vergence eye movements. European Journal of Neuroscience, 2011, 33, 2147-2154.	2.6	60
40	Time Course of Vestibuloocular Reflex Suppression During Gaze Shifts. Journal of Neurophysiology, 2004, 92, 3408-3422.	1.8	58
41	Vestibular animal models: contributions to understanding physiology and disease. Journal of Neurology, 2016, 263, 10-23.	3.6	58
42	Brain Stem Pursuit Pathways: Dissociating Visual, Vestibular, and Proprioceptive Inputs During Combined Eye-Head Gaze Tracking. Journal of Neurophysiology, 2003, 90, 271-290.	1.8	56
43	Analysis of Primate IBN Spike Trains Using System Identification Techniques. II. Relationship to Gaze, Eye, and Head Movement Dynamics During Head-Free Gaze Shifts. Journal of Neurophysiology, 1997, 78, 3283-3306.	1.8	54
44	Loss of Â-Calcitonin Gene-Related Peptide (ÂCGRP) Reduces the Efficacy of the Vestibulo-ocular Reflex (VOR). Journal of Neuroscience, 2014, 34, 10453-10458.	3.6	52
45	Efferent-Mediated Responses in Vestibular Nerve Afferents of the Alert Macaque. Journal of Neurophysiology, 2009, 101, 988-1001.	1.8	51
46	The Vestibular System Implements a Linearâ€"Nonlinear Transformation In Order to Encode Self-Motion. PLoS Biology, 2012, 10, e1001365.	5.6	51
47	Cross-axis adaptation improves 3D vestibulo-ocular reflex alignment during chronic stimulation via a head-mounted multichannel vestibular prosthesis. Experimental Brain Research, 2011, 210, 595-606.	1.5	49
48	Integration of Canal and Otolith Inputs by Central Vestibular Neurons Is Subadditive for Both Active and Passive Self-Motion: Implication for Perception. Journal of Neuroscience, 2015, 35, 3555-3565.	3.6	49
49	Eye, Head, and Body Coordination During Large Gaze Shifts in Rhesus Monkeys: Movement Kinematics and the Influence of Posture. Journal of Neurophysiology, 2007, 97, 2976-2991.	1.8	48
50	Rapid adaptation of multisensory integration in vestibular pathways. Frontiers in Systems Neuroscience, 2015, 9, 59.	2.5	48
51	Physiology of central pathways. Handbook of Clinical Neurology / Edited By P J Vinken and G W Bruyn, 2016, 137, 17-40.	1.8	48
52	Vergence Neurons Identified in the Rostral Superior Colliculus Code Smooth Eye Movements in 3D Space. Journal of Neuroscience, 2013, 33, 7274-7284.	3.6	47
53	Dynamics of Abducens Nucleus Neuron Discharges During Disjunctive Saccades. Journal of Neurophysiology, 2002, 88, 3452-3468.	1.8	45
54	Multisensory integration in early vestibular processing in mice: the encoding of passive vs. active motion. Journal of Neurophysiology, 2013, 110, 2704-2717.	1.8	45

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55	Neuronal detection thresholds during vestibular compensation: contributions of response variability and sensory substitution. Journal of Physiology, 2014, 592, 1565-1580.	2.9	45
56	Premotor Correlates of Integrated Feedback Control for Eye-Head Gaze Shifts. Journal of Neuroscience, 2006, 26, 4922-4929.	3.6	44
57	Early vestibular processing does not discriminate active from passive self-motion if there is a discrepancy between predicted and actual proprioceptive feedback. Journal of Neurophysiology, 2014, 111, 2465-2478.	1.8	44
58	Retinoic acid degradation shapes zonal development of vestibular organs and sensitivity to transient linear accelerations. Nature Communications, 2020, 11, 63.	12.8	43
59	The Increased Sensitivity of Irregular Peripheral Canal and Otolith Vestibular Afferents Optimizes their Encoding of Natural Stimuli. Journal of Neuroscience, 2015, 35, 5522-5536.	3.6	41
60	Neural Correlates of Sensory Prediction Errors in Monkeys: Evidence for Internal Models of Voluntary Self-Motion in the Cerebellum. Cerebellum, 2015, 14, 31-34.	2.5	41
61	The Brain Stem Saccadic Burst Generator Encodes Gaze in Three-Dimensional Space. Journal of Neurophysiology, 2008, 99, 2602-2616.	1.8	40
62	Coding of envelopes by correlated but not single-neuron activity requires neural variability. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 4791-4796.	7.1	40
63	The neural encoding of self-generated and externally applied movement: implications for the perception of self-motion and spatial memory. Frontiers in Integrative Neuroscience, 2014, 7, 108.	2.1	40
64	Coding strategies in the otolith system differ for translational head motion vs. static orientation relative to gravity. ELife, 2019, 8, .	6.0	39
65	An improved method for the estimation of firing rate dynamics using an optimal digital filter. Journal of Neuroscience Methods, 2008, 173, 165-181.	2.5	38
66	Coding of Microsaccades in Three-Dimensional Space by Premotor Saccadic Neurons. Journal of Neuroscience, 2012, 32, 1974-1980.	3.6	38
67	Strong Correlations between Sensitivity and Variability Give Rise to Constant Discrimination Thresholds across the Otolith Afferent Population. Journal of Neuroscience, 2013, 33, 11302-11313.	3.6	38
68	Neuronal evidence for individual eye control in the primate cMRF. Progress in Brain Research, 2008, 171, 143-150.	1.4	37
69	Different neural strategies for multimodal integration: comparison of two macaque monkey species. Experimental Brain Research, 2009, 195, 45-57.	1.5	37
70	Head Movements Evoked in Alert Rhesus Monkey by Vestibular Prosthesis Stimulation: Implications for Postural and Gaze Stabilization. PLoS ONE, 2013, 8, e78767.	2.5	37
71	Self-motion evokes precise spike timing in the primate vestibular system. Nature Communications, 2016, 7, 13229.	12.8	36
72	Envelope statistics of self-motion signals experienced by human subjects during everyday activities: Implications for vestibular processing. PLoS ONE, 2017, 12, e0178664.	2.5	36

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73	Effects of Canal Plugging on the Vestibuloocular Reflex and Vestibular Nerve Discharge During Passive and Active Head Rotations. Journal of Neurophysiology, 2009, 102, 2693-2703.	1.8	35
74	Predictive Sensing: The Role of Motor Signals in Sensory Processing. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, 2019, 4, 842-850.	1.5	35
75	Reflections on the past two decades of neuroscience. Nature Reviews Neuroscience, 2020, 21, 524-534.	10.2	35
76	Conjugate and Vergence Oscillations During Saccades and Gaze Shifts: Implications for Integrated Control of Binocular Movement. Journal of Neurophysiology, 2002, 87, 257-272.	1.8	34
77	The Ventral Posterior Lateral Thalamus Preferentially Encodes Externally Applied Versus Active Movement: Implications for Self-Motion Perception. Cerebral Cortex, 2019, 29, 305-318.	2.9	34
78	Plasticity within non-cerebellar pathways rapidly shapes motor performance in vivo. Nature Communications, 2016, 7, 11238.	12.8	33
79	Cerebellar Prediction of the Dynamic Sensory Consequences of Gravity. Current Biology, 2019, 29, 2698-2710.e4.	3.9	33
80	The nucleus prepositus predominantly outputs eye movement-related information during passive and active self-motion. Journal of Neurophysiology, 2013, 109, 1900-1911.	1.8	31
81	Histopathologic Changes of the Inner ear in Rhesus Monkeys After Intratympanic Gentamicin Injection and Vestibular Prosthesis Electrode Array Implantation. JARO - Journal of the Association for Research in Otolaryngology, 2015, 16, 373-387.	1.8	31
82	Neuronal variability and tuning are balanced to optimize naturalistic self-motion coding in primate vestibular pathways. ELife, 2018, 7, .	6.0	28
83	Challenges to the Vestibular System in Space: How the Brain Responds and Adapts to Microgravity. Frontiers in Neural Circuits, 2021, 15, 760313.	2.8	28
84	Spatial characteristics of neurons in the central mesencephalic reticular formation (cMRF) of head-unrestrained monkeys. Experimental Brain Research, 2006, 168, 455-470.	1.5	26
85	Head Movements in Patients with Vestibular Lesion. Otology and Neurotology, 2014, 35, e348-e357.	1.3	26
86	Dynamic Coding of Vertical Facilitated Vergence by Premotor Saccadic Burst Neurons. Journal of Neurophysiology, 2008, 100, 1967-1982.	1.8	25
87	Dynamic Characterization of Agonist and Antagonist Oculomotoneurons During Conjugate and Disconjugate Eye Movements. Journal of Neurophysiology, 2009, 102, 28-40.	1.8	25
88	Plasticity within excitatory and inhibitory pathways of the vestibulo-spinal circuitry guides changes in motor performance. Scientific Reports, 2017, 7, 853.	3.3	24
89	Comparing Extraocular Motoneuron Discharges During Head-Restrained Saccades and Head-Unrestrained Gaze Shifts. Journal of Neurophysiology, 2000, 83, 630-637.	1.8	23
90	Temporal characteristics of neurons in the central mesencephalic reticular formation of head unrestrained monkeys. Experimental Brain Research, 2006, 168, 471-492.	1.5	23

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91	How Actions Alter Sensory Processing. Annals of the New York Academy of Sciences, 2009, 1164, 29-36.	3.8	20
92	Proprioception and the predictive sensing of active self-motion. Current Opinion in Physiology, 2021, 20, 29-38.	1.8	19
93	The Vestibular System in Everyday Life. , 2012, , 2-20.		19
94	Signal Processing by Vestibular Nuclei Neurons Is Dependent on the Current Behavioral Goal. Annals of the New York Academy of Sciences, 2001, 942, 345-363.	3.8	18
95	Neural Mechanisms Underlying High-Frequency Vestibulocollic Reflexes In Humans And Monkeys. Journal of Neuroscience, 2020, 40, 1874-1887.	3.6	18
96	Effects of vestibular neurectomy and neural compensation on head movements in patients undergoing vestibular schwannoma resection. Scientific Reports, 2021, 11, 517.	3.3	17
97	Passive Activation of Neck Proprioceptive Inputs Does Not Influence the Discharge Patterns of Vestibular Nuclei Neurons. Annals of the New York Academy of Sciences, 2001, 942, 486-489.	3.8	16
98	Local Population Synchrony and the Encoding of Eye Position in the Primate Neural Integrator. Journal of Neuroscience, 2015, 35, 4287-4295.	3.6	15
99	Gaze-, Eye-, and Head-Movement Dynamics During Closed- and Open-Loop Gaze Pursuit. Journal of Neurophysiology, 2002, 87, 859-875.	1.8	14
100	In vivo Conditions Induce Faithful Encoding of Stimuli by Reducing Nonlinear Synchronization in Vestibular Sensory Neurons. PLoS Computational Biology, 2011, 7, e1002120.	3.2	14
101	Neural variability determines coding strategies for natural self-motion in macaque monkeys. ELife, 2020, 9, .	6.0	13
102	Loss of peripheral vestibular input alters the statistics of head movement experienced during natural selfâ€motion. Journal of Physiology, 2021, 599, 2239-2254.	2.9	12
103	Distinct representations of body and head motion are dynamically encoded by Purkinje cell populations in the macaque cerebellum. ELife, 2022, 11, .	6.0	12
104	Analysis of Primate IBN Spike Trains Using System Identification Techniques. III. Relationship to Motor Error During Head-Fixed Saccades and Head-Free Gaze Shifts. Journal of Neurophysiology, 1997, 78, 3307-3322.	1.8	11
105	Local Neural Processing and the Generation of Dynamic Motor Commands within the Saccadic Premotor Network. Journal of Neuroscience, 2010, 30, 10905-10917.	3.6	11
106	Differences in the Structure and Function of the Vestibular Efferent System Among Vertebrates. Frontiers in Neuroscience, 2021, 15, 684800.	2.8	11
107	Responses of Vestibular and Prepositus Neurons to Head Movements during Voluntary Suppression of the Vestibuloocular Reflex. Annals of the New York Academy of Sciences, 1992, 656, 379-395.	3.8	10
108	Procedural Learning: VOR â˜†. , 2017, , 357-374.		10

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109	The neural basis for violations of Weberâ€™s law in self-motion perception. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	10
110	Inhibitory Burst Neuron Activity Encodes Gaze, Not Eye, Metrics and Dynamics during Passive Head on Body Rotation.. Annals of the New York Academy of Sciences, 1996, 781, 601-606.	3.8	9
111	A comparison of head-unrestrained and head-restrained pursuit: influence of eye position and target velocity on latency. Experimental Brain Research, 2000, 133, 139-155.	1.5	8
112	Context-independent encoding of passive and active self-motion in vestibular afferent fibers during locomotion in primates. Nature Communications, 2022, 13, 120.	12.8	8
113	Vestibular compensation after unilateral labyrinthectomy: normal versus cerebellar dysfunctional mice. The Journal of Otolaryngology Supplement, 2007, 36, 315-21.	0.1	8
114	Sensory adaptation mediates efficient and unambiguous encoding of natural stimuli by vestibular thalamocortical pathways. Nature Communications, 2022, 13, 2612.	12.8	8
115	Head movement kinematics are altered during gaze stability exercises in vestibular schwannoma patients. Scientific Reports, 2021, 11, 7139.	3.3	6
116	Predictive coding in early vestibular pathways: Implications for vestibular cognition. Cognitive Neuropsychology, 2020, 37, 423-426.	1.1	5
117	Continuous Head Motion is a Greater Motor Control Challenge than Transient Head Motion in Patients with Loss of Vestibular Function. Neurorehabilitation and Neural Repair, 2021, 35, 890-902.	2.9	5
118	Neural Circuits That Drive Binocular Eye Movements: Implications for Understanding and Correcting Strabismus. Investigative Ophthalmology and Visual Science, 2015, 56, 20-20.	3.3	4
119	Negative optokinetic afternystagmus in larval zebrafish demonstrates set-point adaptation. Scientific Reports, 2019, 9, 19039.	3.3	4
120	Loss of Î±-9 Nicotinic Acetylcholine Receptor Subunit Predominantly Results in Impaired Postural Stability Rather Than Gaze Stability. Frontiers in Cellular Neuroscience, 2021, 15, 799752.	3.7	3
121	Do Extraocular Motoneurons Encode Head Velocity during Headâ€Restrained versus Headâ€Unrestrained Saccadic and Smooth Pursuit Movements?. Annals of the New York Academy of Sciences, 2001, 942, 497-500.	3.8	2
122	Building Bridges through Science. Neuron, 2017, 96, 730-735.	8.1	2
123	Vestibular System â˜†. , 2017, , .		2
124	VOR Suppression. , 2009, , 4378-4386.		1
125	Visuomotor Integration. , 2013, , 839-882.		1
126	Consulting the vestibular system is simply a must if you want to optimize gaze shifts. Brain, 2014, 137, 978-980.	7.6	1

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127	Vestibular System. , 2015, , 63-69.		1
128	The Reafference Principle. , 2018, , 1-3.		1
129	The Processing of Predictable Versus Unpredictable Motion Signals During Natural Self-Motion. , 2020, , 483-495.		1
130	Acceleration. , 2008, , 4-4.		0
131	Vestibulo-Ocular Reflex, Adaptation of the. , 2015, , 70-74.		0
132	Visuomotor Integration. , 2016, , 961-1005.		0
133	Prediction during self-motion: the primate cerebellum selectively encodes unexpected vestibular information. Journal of Vision, 2018, 18, 1359.	0.3	0
134	The Comparator. , 2019, , 1-4.		0
135	Information Processing in the Vestibular System. , 2020, , 38-54.		0
136	Comparator, The. , 2022, , 1584-1587.		0
137	Reafference Principle, The. , 2022, , 5883-5885.		0