William R Schafer

List of Publications by Year
in descending order

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126 papers	10,460 citations	31976 53 h-index	39675 94 g-index
142 all docs	142 docs citations	142 times ranked	8111 citing authors

#	Article	IF	Citations
1	Guidelines on nicotine dose selection for in vivo research. Psychopharmacology, 2007, 190, 269-319.	3.1	694
2	Protein Prenylation: Genes, Enzymes, Targets, and Functions. Annual Review of Genetics, 1992, 26, 209-237.	7.6	367
3	Optical Imaging of Calcium Transients in Neurons and Pharyngeal Muscle of C. elegans. Neuron, 2000, 26, 583-594.	8.1	364
4	A calcium-channel homologue required for adaptation to dopamine and serotonin in Caenorhabditis elegans. Nature, 1995, 375, 73-78.	27.8	296
5	In vivo imaging of C. elegans ASH neurons: cellular response and adaptation to chemical repellents. EMBO Journal, 2005, 24, 63-72.	7.8	293
6	The Insulin/PI 3-Kinase Pathway Regulates Salt Chemotaxis Learning in Caenorhabditis elegans. Neuron, 2006, 51, 613-625.	8.1	285
7	A database of Caenorhabditis elegans behavioral phenotypes. Nature Methods, 2013, 10, 877-879.	19.0	280
8	Network control principles predict neuron function in the Caenorhabditis elegans connectome. Nature, 2017, 550, 519-523.	27.8	279
9	The Rich Club of theC. elegansNeuronal Connectome. Journal of Neuroscience, 2013, 33, 6380-6387.	3.6	265
10	In Vivo Imaging of C. elegans Mechanosensory Neurons Demonstrates a Specific Role for the MEC-4 Channel in the Process of Gentle Touch Sensation. Neuron, 2003, 39, 1005-1017.	8.1	263
11	Specific roles for DEG/ENaC and TRP channels in touch and thermosensation in C. elegans nociceptors. Nature Neuroscience, 2010, 13, 861-868.	14.8	225
12	Control of Alternative Behavioral States by Serotonin in Caenorhabditis elegans. Neuron, 1998, 21, 203-214.	8.1	222
13	Proprioceptive Coupling within Motor Neurons Drives C.Âelegans Forward Locomotion. Neuron, 2012, 76, 750-761.	8.1	219
14	C. elegans TRP Family Protein TRP-4 Is a Pore-Forming Subunit of a Native Mechanotransduction Channel. Neuron, 2010, 67, 381-391.	8.1	216
15	Functional asymmetry in Caenorhabditis elegans taste neurons and its computational role in chemotaxis. Nature, 2008, 454, 114-117.	27.8	209
16	Caenorhabditis elegans TRPA-1 functions in mechanosensation. Nature Neuroscience, 2007, 10, 568-577.	14.8	202
17	A dictionary of behavioral motifs reveals clusters of genes affecting Caenorhabditis elegans locomotion. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 791-796.	7.1	196
18	Dopamine modulates the plasticity of mechanosensory responses in Caenorhabditis elegans. EMBO Journal, 2004, 23, 473-482.	7.8	190

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19	The Multilayer Connectome of Caenorhabditis elegans. PLoS Computational Biology, 2016, 12, e1005283.	3.2	170
20	Specific Polyunsaturated Fatty Acids Drive TRPV-Dependent Sensory Signaling In Vivo. Cell, 2004, 119, 889-900.	28.9	160
21	Identification and characterization of novel nicotinic receptor-associated proteins in Caenorhabditis elegans. EMBO Journal, 2005, 24, 2566-2578.	7.8	160
22	Dopamine Mediates Context-Dependent Modulation of Sensory Plasticity in C. elegans. Neuron, 2007, 55, 662-676.	8.1	150
23	C. elegans multi-dendritic sensory neurons: Morphology and function. Molecular and Cellular Neurosciences, 2011, 46, 308-317.	2.2	147
24	eat-2 and eat-18 Are Required for Nicotinic Neurotransmission in the Caenorhabditis elegans Pharynx. Genetics, 2004, 166, 161-169.	2.9	143
25	Automatic Tracking, Feature Extraction and Classification of C. elegans Phenotypes. IEEE Transactions on Biomedical Engineering, 2004, 51, 1811-1820.	4.2	140
26	Serotonin modulates locomotory behavior and coordinates egg-laying and movement inCaenorhabditis elegans. Journal of Neurobiology, 2001, 49, 303-313.	3.6	133
27	The neurotoxic MEC-4(d) DEG/ENaC sodium channel conducts calcium: implications for necrosis initiation. Nature Neuroscience, 2004, 7, 1337-1344.	14.8	126
28	tmc-1 encodes a sodium-sensitive channel required for salt chemosensation in C. elegans. Nature, 2013, 494, 95-99.	27.8	126
29	Food sensitizesC. elegansavoidance behaviours through acute dopamine signalling. EMBO Journal, 2011, 30, 1110-1122.	7.8	124
30	Using machine vision to analyze and classify Caenorhabditis elegans behavioral phenotypes quantitatively. Journal of Neuroscience Methods, 2002, 118, 9-21.	2.5	121
31	CIB2 interacts with TMC1 and TMC2 and is essential for mechanotransduction in auditory hair cells. Nature Communications, 2017, 8, 43.	12.8	121
32	Analysis of NPR-1 Reveals a Circuit Mechanism for Behavioral Quiescence in C.Âelegans. Neuron, 2013, 78, 869-880.	8.1	115
33	A Putative Cation Channel, NCA-1, and a Novel Protein, UNC-80, Transmit Neuronal Activity in C. elegans. PLoS Biology, 2008, 6, e55.	5.6	109
34	The C. elegans glycosyltransferase BUS-8 has two distinct and essential roles in epidermal morphogenesis. Developmental Biology, 2008, 317, 549-559.	2.0	104
35	Sensory Neuron Fates Are Distinguished by a Transcriptional Switch that Regulates Dendrite Branch Stabilization. Neuron, 2013, 79, 266-280.	8.1	104
36	Genetics of Egg-Laying in Worms. Annual Review of Genetics, 2006, 40, 487-509.	7.6	98

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37	An imaging system for standardized quantitative analysis of C. elegans behavior. BMC Bioinformatics, 2004, 5, 115.	2.6	97
38	An open-source platform for analyzing and sharing worm-behavior data. Nature Methods, 2018, 15, 645-646.	19.0	93
39	A Self-Regulating Feed-Forward Circuit Controlling C. elegans Egg-Laying Behavior. Current Biology, 2008, 18, 1445-1455.	3.9	89
40	Effect of a Neuropeptide Gene on Behavioral States in Caenorhabditis elegans Egg-Laying. Genetics, 2000, 154, 1181-1192.	2.9	89
41	Serotonin and Go Modulate Functional States of Neurons and Muscles Controlling C. elegans Egg-Laying Behavior. Current Biology, 2003, 13, 1910-1915.	3.9	88
42	G Protein-Coupled Receptor Kinase Function Is Essential for Chemosensation in C. elegans. Neuron, 2004, 42, 581-593.	8.1	87
43	Automated imaging of neuronal activity in freely behaving Caenorhabditis elegans. Journal of Neuroscience Methods, 2010, 187, 229-234.	2.5	83
44	Long-Term Nicotine Adaptation inCaenorhabditis elegansInvolves PKC-Dependent Changes in Nicotinic Receptor Abundance. Journal of Neuroscience, 2000, 20, 8802-8811.	3.6	79
45	Egg-laying. WormBook, 2005, , 1-7.	5.3	75
46	Lateral Facilitation between Primary Mechanosensory Neurons Controls Nose Touch Perception in C. elegans. Neuron, 2011, 70, 299-309.	8.1	74
47	A glial DEG/ENaC channel functions with neuronal channel DEG-1 to mediate specific sensory functions in C. elegans. EMBO Journal, 2008, 27, 2388-2399.	7.8	73
48	Deciphering the Neural and Molecular Mechanisms of C. elegans Behavior. Current Biology, 2005, 15, R723-R729.	3.9	68
49	Phase transition in the economically modeled growth of a cellular nervous system. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 7880-7885.	7.1	67
50	Machine vision based detection of omega bends and reversals in C. elegans. Journal of Neuroscience Methods, 2006, 158, 323-336.	2.5	65
51	Regulation of nicotinic receptor trafficking by the transmembrane Golgi protein UNC-50. EMBO Journal, 2007, 26, 4313-4323.	7.8	65
52	The Bright Fluorescent Protein mNeonGreen Facilitates Protein Expression AnalysisIn Vivo. G3: Genes, Genomes, Genetics, 2017, 7, 607-615.	1.8	62
53	Quantitative Classification and Natural Clustering of Caenorhabditis elegans Behavioral Phenotypes. Genetics, 2003, 165, 1117-1126.	2.9	62
54	Genes Affecting Sensitivity to Serotonin in Caenorhabditis elegans. Genetics, 1996, 143, 1219-1230.	2.9	60

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55	C. elegans G Protein Regulator RGS-3 Controls Sensitivity to Sensory Stimuli. Neuron, 2007, 53, 39-52.	8.1	59
56	Stochastic Blockmodeling of the Modules and Core of the Caenorhabditis elegans Connectome. PLoS ONE, 2014, 9, e97584.	2.5	59
57	Mechanosensory molecules and circuits in C. elegans. Pflugers Archiv European Journal of Physiology, 2015, 467, 39-48.	2.8	59
58	Genes Affecting the Activity of Nicotinic Receptors Involved in Caenorhabditis elegans Egg-Laying Behavior. Genetics, 2001, 157, 1599-1610.	2.9	57
59	Changes in Postural Syntax Characterize Sensory Modulation and Natural Variation of C. elegans Locomotion. PLoS Computational Biology, 2015, 11, e1004322.	3.2	55
60	How Do Antidepressants Work? Prospects for Genetic Analysis of Drug Mechanisms. Cell, 1999, 98, 551-554.	28.9	53
61	Effects of voltage-gated calcium channel subunit genes on calcium influx in culturedC. elegans mechanosensory neurons. Journal of Neurobiology, 2006, 66, 1125-1139.	3.6	50
62	Automated and controlled mechanical stimulation and functional imaging in vivo in C. elegans. Lab on A Chip, 2017, 17, 2609-2618.	6.0	49
63	An Afferent Neuropeptide System Transmits Mechanosensory Signals Triggering Sensitization and Arousal in C.Âelegans. Neuron, 2018, 99, 1233-1246.e6.	8.1	49
64	Nematode nervous systems. Current Biology, 2016, 26, R955-R959.	3.9	48
65	A consistent muscle activation strategy underlies crawling and swimming inCaenorhabditis elegans. Journal of the Royal Society Interface, 2015, 12, 20140963.	3.4	47
66	Voltage-Gated Calcium Channels Direct Neuronal Migration in Caenorhabditis elegans. Developmental Biology, 2000, 226, 104-117.	2.0	46
67	A Gap Junction Circuit Enhances Processing of Coincident Mechanosensory Inputs. Current Biology, 2013, 23, 963-967.	3.9	45
68	Ankyrin Is An Intracellular Tether for TMC Mechanotransduction Channels. Neuron, 2020, 107, 112-125.e10.	8.1	45
69	Visualization of integral and peripheral cell surface proteins in live Caenorhabditis elegans. Journal of Neuroscience Methods, 2006, 154, 68-79.	2.5	44
70	Rewiring neural circuits by the insertion of ectopic electrical synapses in transgenic C. elegans. Nature Communications, 2014, 5, 4442.	12.8	43
71	Sensory Neurons Arouse C. elegans Locomotion via Both Glutamate and Neuropeptide Release. PLoS Genetics, 2015, 11, e1005359.	3.5	41
72	Neuropeptidergic Signaling and Active Feeding State Inhibit Nociception inCaenorhabditis elegans. Journal of Neuroscience, 2016, 36, 3157-3169.	3.6	41

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73	Serotonin Promotes Go-Dependent Neuronal Migration in Caenorhabditis elegans. Current Biology, 2002, 12, 1738-1747.	3.9	33
74	Intracellular Ca²⁺ Imaging in C. elegans. , 2006, 351, 253-264.		32
75	Automated Imaging of C. elegans Behavior. , 2006, 351, 241-252.		31
76	Spatial Asymmetry in the Mechanosensory Phenotypes of the C. elegans DEG/ENaC Gene mec-10. Journal of Neurophysiology, 2010, 104, 3334-3344.	1.8	30
77	The Voltage-Gated Anion Channels Encoded byclh-3Regulate Egg Laying inC. elegansby Modulating Motor Neuron Excitability. Journal of Neuroscience, 2014, 34, 764-775.	3.6	29
78	A Seven-Transmembrane Receptor That Mediates Avoidance Response to Dihydrocaffeic Acid, a Water-Soluble Repellent inCaenorhabditis elegans. Journal of Neuroscience, 2011, 31, 16603-16610.	3.6	28
79	Neuropeptides encoded bynlp-49modulate locomotion, arousal and egg-laying behaviours inCaenorhabditis elegansvia the receptor SEB-3. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170368.	4.0	28
80	Automated detection and analysis of foraging behavior in Caenorhabditis elegans. Journal of Neuroscience Methods, 2008, 171, 153-164.	2.5	27
81	Inositol 1,4,5-Trisphosphate Signalling Regulates the Avoidance Response to Nose Touch in Caenorhabditis elegans. PLoS Genetics, 2009, 5, e1000636.	3.5	26
82	Caenorhabditis elegans nicotinic acetylcholine receptors are required for nociception. Molecular and Cellular Neurosciences, 2014, 59, 85-96.	2.2	26
83	On-chip functional neuroimaging with mechanical stimulation inCaenorhabditis eleganslarvae for studying development and neural circuits. Lab on A Chip, 2018, 18, 601-609.	6.0	26
84	Neuropeptide-Driven Cross-Modal Plasticity following Sensory Loss in Caenorhabditis elegans. PLoS Biology, 2016, 14, e1002348.	5.6	26
85	Addiction research in a simple animal model: the nematode Caenorhabditis elegans. Neuropharmacology, 2004, 47, 123-131.	4.1	25
86	Tyramine Acts Downstream of Neuronal XBP-1s to Coordinate Inter-tissue UPRER Activation and Behavior in C.Âelegans. Developmental Cell, 2020, 55, 754-770.e6.	7.0	25
87	Locomotion analysis identifies roles of mechanosensory neurons in governing locomotion dynamics of C. elegans. Journal of Experimental Biology, 2012, 215, 3639-48.	1.7	23
88	Caenorhabditis elegans and the network control frameworkâ€”FAQs. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170372.	4.0	23
89	Neurophysiological methods in C. elegans: an introduction. WormBook, 2006, , 1-4.	5.3	22
90	Distinct roles for innexin gap junctions and hemichannels in mechanosensation. ELife, 2020, 9, .	6.0	19

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91	Chemosensory Neurons Modulate the Response to Oomycete Recognition in Caenorhabditis elegans. Cell Reports, 2021, 34, 108604.	6.4	17
92	Preparation of Samples for Single-Worm Tracking. Cold Spring Harbor Protocols, 2011, 2011, pdb.prot066993.	0.3	16
93	PACRG, a protein linked to ciliary motility, mediates cellular signaling. Molecular Biology of the Cell, 2016, 27, 2133-2144.	2.1	16
94	A circuit model of the temporal pattern generator of Caenorhabditis egg-laying behavior. BMC Systems Biology, 2010, 4, 81.	3.0	14
95	Recordings of Caenorhabditis elegans locomotor behaviour following targeted ablation of single motorneurons. Scientific Data, 2017, 4, 170156.	5.3	14
96	The Worm Connectome: Back to the Future. Trends in Neurosciences, 2018, 41, 763-765.	8.6	14
97	Multimodal Stimulation in a Microfluidic Device Facilitates Studies of Interneurons in Sensory Integration in C. elegans. Small, 2020, 16, e1905852.	10.0	13
98	Sleep Analysis in AdultC. elegansReveals State-Dependent Alteration of Neural and Behavioral Responses. Journal of Neuroscience, 2021, 41, 1892-1907.	3.6	13
99	Deorphanization of novel biogenic amine-gated ion channels identifies a new serotonin receptor for learning. Current Biology, 2021, 31, 4282-4292.e6.	3.9	13
100	AUTOMATED TRACKING OF MULTIPLE C. ELEGANS WITH ARTICULATED MODELS. , 2007, , .		12
101	Worms With a Single Functional Sensory Cilium Generate Proper Neuron-Specific Behavioral Output. Genetics, 2009, 183, 595-605.	2.9	12
102	Genetic analysis of nicotinic signaling in worms and flies. Journal of Neurobiology, 2002, 53, 535-541.	3.6	11
103	Oxygen Homeostasis: How the Worm Adapts to Variable Oxygen Levels. Current Biology, 2008, 18, R559-R560.	3.9	11
104	Engineering new synaptic connections in theC. elegansconnectome. Worm, 2015, 4, e992668.	1.0	11
105	PKG and the Neural Basis for Behavioral Phenotypes. Neuron, 2002, 36, 991-993.	8.1	10
106	Proprioception: A Channel for Body Sense in the Worm. Current Biology, 2006, 16, R509-R511.	3.9	10
107	EFHC1, implicated in juvenile myoclonic epilepsy, functions at the cilium and synapse to modulate dopamine signaling. ELife, 2019, 8, .	6.0	10
108	Identification of a Conserved, Orphan G Protein-Coupled Receptor Required for Efficient Pathogen Clearance in Caenorhabditis elegans. Infection and Immunity, 2019, 87, .	2.2	10

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109	Caenorhabditis elegans Egg-Laying Detection and Behavior Study Using Image Analysis. Eurasip Journal on Advances in Signal Processing, 2005, 2005, 1.	1.7	8
110	Using Articulated Models for Tracking Multiple C. elegans in Physical Contact. Journal of Signal Processing Systems, 2009, 55, 113-126.	2.1	8
111	Illumination for Worm Tracking and Behavioral Imaging: Figure 1.. Cold Spring Harbor Protocols, 2011, 2011, pdb.prot067009.	0.3	6
112	Genetics of Behavior in C. elegans. , 0, , 151-170.		6
113	Distinct roles for two Caenorhabditis elegans acid-sensing ion channels in an ultradian clock. ELife, 0, 11, .	6.0	6
114	Neuropeptide signalling shapes feeding and reproductive behaviours in male Caenorhabditis elegans. Life Science Alliance, 2022, 5, e202201420.	2.8	5
115	Unrestrained worms bridled by the light. Nature Methods, 2011, 8, 129-130.	19.0	3
116	Tackling thermosensation with multidimensional phenotyping. BMC Biology, 2012, 10, 91.	3.8	3
117	Neuropeptide Signaling: From the Gut. Current Biology, 2013, 23, R481-R483.	3.9	3
118	Neuronal remodeling on the evolutionary timescale. Journal of Biology, 2008, 7, 37.	2.7	2
119	In vivo imaging of C. elegans ASH neurons: cellular response and adaptation to chemical repellents. EMBO Journal, 2005, 24, 1489-1489.	7.8	1
120	Automated Detection and Analysis of Foraging Behavior in C. elegans. , 2008, , .		1
121	A network for swimming. ELife, 2017, 6, .	6.0	1
122	A glial DEG/ENaC channel functions with neuronal channel DEG-1 to mediate specific sensory functions in C. elegans. EMBO Journal, 2008, 27, 2638-2638.	7.8	0
123	Automated behavioural fingerprinting of Caenorhabditis elegans mutants. , 0, , 234-256.		0
124	Dopamine helps worms deal with stress. EMBO Journal, 2016, 35, 1851-1852.	7.8	0
125	A mutation in a CLC anion channel alters serotonergic neuronal activity in C. elegans. FASEB Journal, 2012, 26, 884.5.	0.5	0
126	6 Optogenetic actuation, inhibition, modulation and readout for neuronal networks generating behavior in the nematode Caenorhabditis elegans. , 2013, , 61-78.		0