

Graham W Knott

List of Publications by Year in descending order

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113
papers

14,676
citations

38660

50
h-index

26548

107
g-index

125
all docs

125
docs citations

125
times ranked

17116
citing authors

#	ARTICLE	IF	CITATIONS
1	Long-term in vivo imaging of experience-dependent synaptic plasticity in adult cortex. <i>Nature</i> , 2002, 420, 788-794.	13.7	1,706
2	Transient and Persistent Dendritic Spines in the Neocortex In Vivo. <i>Neuron</i> , 2005, 45, 279-291.	3.8	1,003
3	Long-term, high-resolution imaging in the mouse neocortex through a chronic cranial window. <i>Nature Protocols</i> , 2009, 4, 1128-1144.	5.5	894
4	Mitochondrial protein imbalance as a conserved longevity mechanism. <i>Nature</i> , 2013, 497, 451-457.	13.7	846
5	Serial Section Scanning Electron Microscopy of Adult Brain Tissue Using Focused Ion Beam Milling. <i>Journal of Neuroscience</i> , 2008, 28, 2959-2964.	1.7	600
6	Experience-dependent and cell-type-specific spine growth in the neocortex. <i>Nature</i> , 2006, 441, 979-983.	13.7	562
7	Experience and Activity-Dependent Maturation of Perisomatic GABAergic Innervation in Primary Visual Cortex during a Postnatal Critical Period. <i>Journal of Neuroscience</i> , 2004, 24, 9598-9611.	1.7	540
8	Spine growth precedes synapse formation in the adult neocortex in vivo. <i>Nature Neuroscience</i> , 2006, 9, 1117-1124.	7.1	506
9	The process of Lewy body formation, rather than simply α -synuclein fibrillization, is one of the major drivers of neurodegeneration. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 4971-4982.	3.3	422
10	Formation of Dendritic Spines with GABAergic Synapses Induced by Whisker Stimulation in Adult Mice. <i>Neuron</i> , 2002, 34, 265-273.	3.8	402
11	Cell Type-Specific Structural Plasticity of Axonal Branches and Boutons in the Adult Neocortex. <i>Neuron</i> , 2006, 49, 861-875.	3.8	376
12	Synaptic proximity enables NMDAR signalling to promote brain metastasis. <i>Nature</i> , 2019, 573, 526-531.	13.7	320
13	Ultrastructural analysis of adult mouse neocortex comparing aldehyde perfusion with cryo fixation. <i>eLife</i> , 2015, 4, .	2.8	315
14	GAD67-Mediated GABA Synthesis and Signaling Regulate Inhibitory Synaptic Innervation in the Visual Cortex. <i>Neuron</i> , 2007, 54, 889-903.	3.8	277
15	Connexin 30 sets synaptic strength by controlling astroglial synapse invasion. <i>Nature Neuroscience</i> , 2014, 17, 549-558.	7.1	269
16	Plasticity of Astrocytic Coverage and Glutamate Transporter Expression in Adult Mouse Cortex. <i>PLoS Biology</i> , 2006, 4, e343.	2.6	260
17	Rapid Functional Maturation of Nascent Dendritic Spines. <i>Neuron</i> , 2009, 61, 247-258.	3.8	240
18	Supervoxel-Based Segmentation of Mitochondria in EM Image Stacks With Learned Shape Features. <i>IEEE Transactions on Medical Imaging</i> , 2012, 31, 474-486.	5.4	197

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19	The Relationship between PSD-95 Clustering and Spine Stability <i>In Vivo</i> . <i>Journal of Neuroscience</i> , 2014, 34, 2075-2086.	1.7	183
20	Induction of Spine Growth and Synapse Formation by Regulation of the Spine Actin Cytoskeleton. <i>Neuron</i> , 2004, 44, 321-334.	3.8	178
21	PSD-95 promotes synaptogenesis and multiinnervated spine formation through nitric oxide signaling. <i>Journal of Cell Biology</i> , 2008, 183, 1115-1127.	2.3	161
22	Impairment of Glycolysis-Derived L-Serine Production in Astrocytes Contributes to Cognitive Deficits in Alzheimer's Disease. <i>Cell Metabolism</i> , 2020, 31, 503-517.e8.	7.2	160
23	Subcellular domain-restricted GABAergic innervation in primary visual cortex in the absence of sensory and thalamic inputs. <i>Nature Neuroscience</i> , 2004, 7, 1184-1186.	7.1	152
24	Altered Synaptic Dynamics during Normal Brain Aging. <i>Journal of Neuroscience</i> , 2013, 33, 4094-4104.	1.7	148
25	Barriers in the immature brain. <i>Cellular and Molecular Neurobiology</i> , 2000, 20, 29-40.	1.7	140
26	Locally coordinated synaptic plasticity of visual cortex neurons in vivo. <i>Science</i> , 2018, 360, 1349-1354.	6.0	137
27	Nigrostriatal overabundance of α -synuclein leads to decreased vesicle density and deficits in dopamine release that correlate with reduced motor activity. <i>Acta Neuropathologica</i> , 2012, 123, 653-669.	3.9	132
28	Multicut brings automated neurite segmentation closer to human performance. <i>Nature Methods</i> , 2017, 14, 101-102.	9.0	126
29	Automated Detection and Segmentation of Synaptic Contacts in Nearly Isotropic Serial Electron Microscopy Images. <i>PLoS ONE</i> , 2011, 6, e24899.	1.1	120
30	Ultrastructurally smooth thick partitioning and volume stitching for large-scale connectomics. <i>Nature Methods</i> , 2015, 12, 319-322.	9.0	119
31	Increased axonal bouton dynamics in the aging mouse cortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, E1514-23.	3.3	112
32	In vivo single branch axotomy induces GAP-43-dependent sprouting and synaptic remodeling in cerebellar cortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 10824-10829.	3.3	108
33	The RNA-Binding Protein PUM2 Impairs Mitochondrial Dynamics and Mitophagy During Aging. <i>Molecular Cell</i> , 2019, 73, 775-787.e10.	4.5	100
34	GABA Signaling Promotes Synapse Elimination and Axon Pruning in Developing Cortical Inhibitory Interneurons. <i>Journal of Neuroscience</i> , 2012, 32, 331-343.	1.7	98
35	Altered Synapse Formation in the Adult Somatosensory Cortex of Brain-Derived Neurotrophic Factor Heterozygote Mice. <i>Journal of Neuroscience</i> , 2004, 24, 2394-2400.	1.7	95
36	BMP signaling specifies the development of a large and fast CNS synapse. <i>Nature Neuroscience</i> , 2013, 16, 856-864.	7.1	90

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37	In vivo modeling of human neuron dynamics and Down syndrome. <i>Science</i> , 2018, 362, .	6.0	87
38	FOXO3 determines the accumulation of β -synuclein and controls the fate of dopaminergic neurons in the substantia nigra. <i>Human Molecular Genetics</i> , 2014, 23, 1435-1452.	1.4	84
39	Ciliary Neurotrophic Factor Activates Astrocytes, Redistributes Their Glutamate Transporters GLAST and GLT-1 to Raft Microdomains, and Improves Glutamate Handling In Vivo. <i>Journal of Neuroscience</i> , 2006, 26, 5978-5989.	1.7	79
40	Correlative In Vivo 2 Photon and Focused Ion Beam Scanning Electron Microscopy of Cortical Neurons. <i>PLoS ONE</i> , 2013, 8, e57405.	1.1	79
41	PGC-1 β activity in nigral dopamine neurons determines vulnerability to β -synuclein. <i>Acta Neuropathologica Communications</i> , 2015, 3, 16.	2.4	74
42	A protocol for preparing GFP-labeled neurons previously imaged in vivo and in slice preparations for light and electron microscopic analysis. <i>Nature Protocols</i> , 2009, 4, 1145-1156.	5.5	71
43	Dysfunction of homeostatic control of dopamine by astrocytes in the developing prefrontal cortex leads to cognitive impairments. <i>Molecular Psychiatry</i> , 2020, 25, 732-749.	4.1	71
44	Focussed Ion Beam Milling and Scanning Electron Microscopy of Brain Tissue. <i>Journal of Visualized Experiments</i> , 2011, , e2588.	0.2	70
45	Is EM dead?. <i>Journal of Cell Science</i> , 2013, 126, 4545-4552.	1.2	69
46	The nature of the decrease in blood-cerebrospinal fluid barrier exchange during postnatal brain development in the rat.. <i>Journal of Physiology</i> , 1993, 468, 73-83.	1.3	66
47	NeuroMorph: A Toolset for the Morphometric Analysis and Visualization of 3D Models Derived from Electron Microscopy Image Stacks. <i>Neuroinformatics</i> , 2015, 13, 83-92.	1.5	64
48	Dendritic spine plasticity—Current understanding from in vivo studies. <i>Brain Research Reviews</i> , 2008, 58, 282-289.	9.1	61
49	Conditional expression of Parkinson's disease-related R1441C LRRK2 in midbrain dopaminergic neurons of mice causes nuclear abnormalities without neurodegeneration. <i>Neurobiology of Disease</i> , 2014, 71, 345-358.	2.1	59
50	The effects of aging on neuropil structure in mouse somatosensory cortex—A 3D electron microscopy analysis of layer 1. <i>PLoS ONE</i> , 2018, 13, e0198131.	1.1	59
51	Analysis of centriole elimination during <i>C. elegans</i> oogenesis. <i>Development (Cambridge)</i> , 2012, 139, 1670-1679.	1.2	58
52	Pansynaptic Enlargement at Adult Cortical Connections Strengthened by Experience. <i>Cerebral Cortex</i> , 2014, 24, 521-531.	1.6	56
53	Mitofusin-2 in the Nucleus Accumbens Regulates Anxiety and Depression-like Behaviors Through Mitochondrial and Neuronal Actions. <i>Biological Psychiatry</i> , 2021, 89, 1033-1044.	0.7	55
54	Glial Glutamate Transporters and Maturation of the Mouse Somatosensory Cortex. <i>Cerebral Cortex</i> , 2003, 13, 1110-1121.	1.6	52

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55	Development of thalamocortical projections in the South American gray short-tailed opossum (<i>Monodelphis domestica</i>). , 1998, 398, 491-514.		51
56	Parkin functionally interacts with PGC-1 β to preserve mitochondria and protect dopaminergic neuron. Human Molecular Genetics, 2017, 26, ddw418.	1.4	50
57	Globally Optimal Closed-Surface Segmentation for Connectomics. Lecture Notes in Computer Science, 2012, , 778-791.	1.0	50
58	REPAIR AND RECOVERY FOLLOWING SPINAL CORD INJURY IN A NEONATAL MARSUPIAL (MONODELPHIS) Tj ETQq0,0,0 rgBT /Overlock 1	0.9	48
59	Dynamic persistence of UPEC intracellular bacterial communities in a human bladder-chip model of urinary tract infection. ELife, 2021, 10, .	2.8	47
60	Molecular insights into <i>Vibrio cholerae</i> 's intra-amoebal host-pathogen interactions. Nature Communications, 2018, 9, 3460.	5.8	46
61	Semiautomated correlative 3D electron microscopy of in vivo imaged axons and dendrites. Nature Protocols, 2014, 9, 1354-1366.	5.5	45
62	Synapse formation in adult barrel cortex following naturalistic environmental enrichment. Neuroscience, 2011, 199, 143-152.	1.1	43
63	Imaging of experience-dependent structural plasticity in the mouse neocortex in vivo. Behavioural Brain Research, 2008, 192, 20-25.	1.2	42
64	Learning Context Cues for Synapse Segmentation. IEEE Transactions on Medical Imaging, 2013, 32, 1864-1877.	5.4	42
65	Nuclear and cytoplasmic huntingtin inclusions exhibit distinct biochemical composition, interactome and ultrastructural properties. Nature Communications, 2021, 12, 6579.	5.8	42
66	The nature and composition of the internal environment of the developing brain. Cellular and Molecular Neurobiology, 2000, 20, 41-56.	1.7	40
67	A single epidermal stem cell strategy for safe ex vivo gene therapy. EMBO Molecular Medicine, 2015, 7, 380-393.	3.3	40
68	Gas cluster ion beam SEM for imaging of large tissue samples with 10 μ m isotropic resolution. Nature Methods, 2020, 17, 68-71.	9.0	40
69	NanoSIMS analysis of an isotopically labelled organometallic ruthenium(^{II}) drug to probe its distribution and state in vitro. Chemical Communications, 2015, 51, 16486-16489.	2.2	39
70	Voxel2Mesh: 3D Mesh Model Generation from Volumetric Data. Lecture Notes in Computer Science, 2020, , 299-308.	1.0	38
71	Motifs in the tau protein that control binding to microtubules and aggregation determine pathological effects. Scientific Reports, 2017, 7, 13556.	1.6	35
72	Differences in cisplatin distribution in sensitive and resistant ovarian cancer cells: a TEM/NanoSIMS study. Metallomics, 2017, 9, 1413-1420.	1.0	34

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73	Modulating the catalytic activity of AMPK has neuroprotective effects against $\hat{\pm}$ -synuclein toxicity. <i>Molecular Neurodegeneration</i> , 2017, 12, 80.	4.4	33
74	NeuroMorph: A Software Toolset for 3D Analysis of Neurite Morphology and Connectivity. <i>Frontiers in Neuroanatomy</i> , 2018, 12, 59.	0.9	31
75	Somatostatin enhances visual processing and perception by suppressing excitatory inputs to parvalbumin-positive interneurons in V1. <i>Science Advances</i> , 2020, 6, eaaz0517.	4.7	29
76	Learning Structured Models for Segmentation of 2-D and 3-D Imagery. <i>IEEE Transactions on Medical Imaging</i> , 2015, 34, 1096-1110.	5.4	27
77	Diversity of Cortico-descending Projections: Histological and Diffusion MRI Characterization in the Monkey. <i>Cerebral Cortex</i> , 2019, 29, 788-801.	1.6	27
78	The Differential Distribution of RAPTA-T in Non-Invasive and Invasive Breast Cancer Cells Correlates with Its Anti-Invasive and Anti-Metastatic Effects. <i>International Journal of Molecular Sciences</i> , 2017, 18, 1869.	1.8	25
79	Morphological and molecular heterogeneity in release sites of single neurons. <i>European Journal of Neuroscience</i> , 2003, 17, 1365-1374.	1.2	23
80	Correlative In Vivo 2-Photon Imaging and Focused Ion Beam Scanning Electron Microscopy. <i>Methods in Cell Biology</i> , 2014, 124, 339-361.	0.5	23
81	Identification of aminopyrimidine-sulfonamides as potent modulators of Wag31-mediated cell elongation in mycobacteria. <i>Molecular Microbiology</i> , 2017, 103, 13-25.	1.2	22
82	Ultrastructural comparison of dendritic spine morphology preserved with cryo and chemical fixation. <i>ELife</i> , 2020, 9, .	2.8	22
83	Imaging liver and brain glycogen metabolism at the nanometer scale. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2015, 11, 239-245.	1.7	20
84	Learning Context Cues for Synapse Segmentation in EM Volumes. <i>Lecture Notes in Computer Science</i> , 2012, 15, 585-592.	1.0	20
85	ADAMTS18+ villus tip telocytes maintain a polarized VEGFA signaling domain and fenestrations in nutrient-absorbing intestinal blood vessels. <i>Nature Communications</i> , 2022, 13, .	5.8	20
86	Block Face Scanning Electron Microscopy of Fluorescently Labeled Axons Without Using Near Infra-Red Branding. <i>Frontiers in Neuroanatomy</i> , 2018, 12, 88.	0.9	19
87	SAS-1 Is a C2 Domain Protein Critical for Centriole Integrity in <i>C. elegans</i> . <i>PLoS Genetics</i> , 2014, 10, e1004777.	1.5	18
88	Computer assisted detection of axonal bouton structural plasticity in in vivo time-lapse images. <i>ELife</i> , 2017, 6, .	2.8	18
89	Amygdala GluN2B-NMDAR dysfunction is critical in abnormal aggression of neurodevelopmental origin induced by <i>St8sia2</i> deficiency. <i>Molecular Psychiatry</i> , 2020, 25, 2144-2161.	4.1	18
90	Combined deletion of <i>Glut1</i> and <i>Glut3</i> impairs lung adenocarcinoma growth. <i>ELife</i> , 2020, 9, .	2.8	18

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91	Delayed and Temporally Imprecise Neurotransmission in Reorganizing Cortical Microcircuits. Journal of Neuroscience, 2015, 35, 9024-9037.	1.7	17
92	Development of motoneurons and primary sensory afferents in the thoracic and lumbar spinal cord of the South American opossum <i>Monodelphis domestica</i> . , 1999, 414, 423-436.		13
93	Cell Division by Longitudinal Scission in the Insect Endosymbiont <i>Spiroplasma poulsonii</i> . MBio, 2016, 7, .	1.8	13
94	Early invasion of the bladder wall by solitary bacteria protects UPEC from antibiotics and neutrophil swarms in an organoid model. Cell Reports, 2021, 36, 109351.	2.9	13
95	Increasing depth resolution of electron microscopy of neural circuits using sparse tomographic reconstruction. , 2010, , .		12
96	Seeded watershed cut uncertainty estimators for guided interactive segmentation. , 2012, , .		12
97	Ultrastructural basis of strong unitary inhibition in a binocular neuron. Journal of Physiology, 2018, 596, 4969-4982.	1.3	10
98	Imaging the time-integrated cerebral metabolic activity with subcellular resolution through nanometer-scale detection of biosynthetic products deriving from ¹³ C-glucose. Journal of Chemical Neuroanatomy, 2015, 69, 7-12.	1.0	9
99	Nano-imaging trace elements at organelle levels in substantia nigra overexpressing α -synuclein to model Parkinson's disease. Communications Biology, 2020, 3, 364.	2.0	9
100	Maturation of Complex Synaptic Connections of Layer 5 Cortical Axons in the Posterior Thalamic Nucleus Requires SNAP25. Cerebral Cortex, 2021, 31, 2625-2638.	1.6	9
101	Cellular Uptake and Intracellular Trafficking of Poly(<i>N</i> -(2-Hydroxypropyl) Methacrylamide). Biomacromolecules, 2019, 20, 231-242.	2.6	8
102	3D Ultrastructure of Synaptic Inputs to Distinct GABAergic Neurons in the Mouse Primary Visual Cortex. Cerebral Cortex, 2021, 31, 2610-2624.	1.6	7
103	Deep Active Surface Models. , 2021, , .		7
104	A subpopulation of cortical VIP-expressing interneurons with highly dynamic spines. Communications Biology, 2022, 5, 352.	2.0	7
105	Primary sensory afferent innervation of the developing superficial dorsal horn in the South American opossum <i>Monodelphis domestica</i> . Journal of Comparative Neurology, 2006, 495, 37-52.	0.9	6
106	Cold shock protects the brain. Nature, 2015, 518, 177-178.	13.7	6
107	Modeling brain circuitry over a wide range of scales. Frontiers in Neuroanatomy, 2015, 9, 42.	0.9	5
108	Flash Scanning Electron Microscopy. Lecture Notes in Computer Science, 2013, 16, 413-420.	1.0	2

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109	Toward Biophysical Mechanisms of Neocortical Computation after 50 Years of Barrel Cortex Research. <i>Function</i> , 2020, 2, zqaa046.	1.1	2
110	Multi-Modal Optical Imaging of the Cerebellum in Animals. <i>Cerebellum</i> , 2016, 15, 18-20.	1.4	1
111	Efficient Scanning for EM Based Target Localization. <i>Lecture Notes in Computer Science</i> , 2012, 15, 337-344.	1.0	1
112	Response: use-dependent inhibition of dendritic spines. <i>Trends in Neurosciences</i> , 2002, 25, 543-544.	4.2	0
113	Imaging Green Fluorescent Protein-Labeled Neurons Using Light and Electron Microscopy. <i>Cold Spring Harbor Protocols</i> , 2013, 2013, pdb.prot075127.	0.2	0