Mark J Schnitzer

List of Publications by Year in Descending Order

97 papers	14,331 citations	58 h-index	105 g-index
105 ext. papers	17,686 ext. citations	21.7 avg, IF	6.69 L-index

#	Paper	IF	Citations
97	Fluorescence imaging of large-scale neural ensemble dynamics.. *Cell*, **2022**, 185, 9-41	56.2	7
96	Olfactory landmarks and path integration converge to form a cognitive spatial map. *Neuron*, **2021**,	13.9	4
95	The relationship between birth timing, circuit wiring, and physiological response properties of cerebellar granule cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	2
94	A neural circuit state change underlying skilled movements. *Cell*, **2021**, 184, 3731-3747.e21	56.2	8
93	Supramammillary regulation of locomotion and hippocampal activity.. *Science*, **2021**, 374, 1492-1496	33.3	2
92	Fundamental bounds on the fidelity of sensory cortical coding. *Nature*, **2020**, 580, 100-105	50.4	57
91	RecV recombinase system for in vivo targeted optogenomic modifications of single cells or cell populations. *Nature Methods*, **2020**, 17, 422-429	21.6	14
90	Skilled reaching tasks for head-fixed mice using a robotic manipulandum. *Nature Protocols*, **2020**, 15, 1237-1254	18.8	7
89	Microendoscopy detects altered muscular contractile dynamics in a mouse model of amyotrophic lateral sclerosis. *Scientific Reports*, **2020**, 10, 457	4.9	3
88	Cross-hemispheric gamma synchrony between prefrontal parvalbumin interneurons supports behavioral adaptation during rule shift learning. *Nature Neuroscience*, **2020**, 23, 892-902	25.5	18
87	Amygdala ensembles encode behavioral states. *Science*, **2019**, 364,	33.3	62
86	Shared Cortex-Cerebellum Dynamics in the Execution and Learning of a Motor Task. *Cell*, **2019**, 177, 669-682.e24	56.2	25
85	Kilohertz two-photon brain imaging in awake mice. *Nature Methods*, **2019**, 16, 1119-1122	21.6	37
84	Ultrafast Two-Photon Imaging of a High-Gain Voltage Indicator in Awake Behaving Mice. *Cell*, **2019**, 179, 1590-1608.e23	56.2	127
83	An amygdalar neural ensemble that encodes the unpleasantness of pain. *Science*, **2019**, 363, 276-281	33.3	123
82	Long-term optical brain imaging in live adult fruit flies. *Nature Communications*, **2018**, 9, 872	17.4	18
81	Diametric neural ensemble dynamics in parkinsonian and dyskinetic states. *Nature*, **2018**, 557, 177-182	50.4	131

80	Calcium Transient Dynamics of Neural Ensembles in the Primary Motor Cortex of Naturally Behaving Monkeys. *Cell Reports*, **2018**, 24, 2191-2195.e4	10.6	28
79	Unsupervised Discovery of Demixed, Low-Dimensional Neural Dynamics across Multiple Timescales through Tensor Component Analysis. *Neuron*, **2018**, 98, 1099-1115.e8	13.9	89
78	Fast, in vivo voltage imaging using a red fluorescent indicator. *Nature Methods*, **2018**, 15, 1108-1116	21.6	76
77	Long-Term Consolidation of Ensemble Neural Plasticity Patterns in Hippocampal Area CA1. *Cell Reports*, **2018**, 25, 640-650.e2	10.6	24
76	Three-photon imaging of mouse brain structure and function through the intact skull. *Nature Methods*, **2018**, 15, 789-792	21.6	146
75	Cerebellar granule cells encode the expectation of reward. *Nature*, **2017**, 544, 96-100	50.4	262
74	Neural ensemble dynamics underlying a long-term associative memory. *Nature*, **2017**, 543, 670-675	50.4	164
73	Neuronal Representation of Social Information in the Medial Amygdala of Awake Behaving Mice. *Cell*, **2017**, 171, 1176-1190.e17	56.2	121
72	Social behaviour shapes hypothalamic neural ensemble representations of conspecific sex. *Nature*, **2017**, 550, 388-392	50.4	103
71	Genetically encoded indicators of neuronal activity. *Nature Neuroscience*, **2016**, 19, 1142-53	25.5	390
70	Changes in sarcomere lengths of the human vastus lateralis muscle with knee flexion measured using in vivo microendoscopy. *Journal of Biomechanics*, **2016**, 49, 2989-2994	2.9	24
69	Distinct Hippocampal Pathways Mediate Dissociable Roles of Context in Memory Retrieval. *Cell*, **2016**, 167, 961-972.e16	56.2	142
68	Cell-Type-Specific Optical Recording of Membrane Voltage Dynamics in Freely Moving Mice. *Cell*, **2016**, 167, 1650-1662.e15	56.2	58
67	Long-Term Optical Access to an Estimated One Million Neurons in the Live Mouse Cortex. *Cell Reports*, **2016**, 17, 3385-3394	10.6	119
66	Large-Scale Fluorescence Calcium-Imaging Methods for Studies of Long-Term Memory in Behaving Mammals. *Cold Spring Harbor Perspectives in Biology*, **2016**, 8,	10.2	27
65	Distinct speed dependence of entorhinal island and ocean cells, including respective grid cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 9466-71	11.5	88
64	Impermanence of dendritic spines in live adult CA1 hippocampus. *Nature*, **2015**, 523, 592-6	50.4	216
63	Cellular level brain imaging in behaving mammals: an engineering approach. *Neuron*, **2015**, 86, 140-59	13.9	111

62	Entorhinal Cortical Ocean Cells Encode Specific Contexts and Drive Context-Specific Fear Memory. *Neuron*, **2015**, 87, 1317-1331	13.9	88
61	The BRAIN Initiative: developing technology to catalyse neuroscience discovery. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2015**, 370,	5.8	119
60	Optogenetics: 10 years after ChR2 in neurons--views from the community. *Nature Neuroscience*, **2015**, 18, 1202-12	25.5	98
59	High-speed recording of neural spikes in awake mice and flies with a fluorescent voltage sensor. *Science*, **2015**, 350, 1361-6	33.3	307
58	Dexterous robotic manipulation of alert adult Drosophila for high-content experimentation. *Nature Methods*, **2015**, 12, 657-660	21.6	12
57	In Vivo Imaging of Human Sarcomere Twitch Dynamics in Individual Motor Units. *Neuron*, **2015**, 88, 1109-1120	13.9	38
56	High-fidelity optical reporting of neuronal electrical activity with an ultrafast fluorescent voltage sensor. *Nature Neuroscience*, **2014**, 17, 884-9	25.5	319
55	Imaging neural spiking in brain tissue using FRET-opsin protein voltage sensors. *Nature Communications*, **2014**, 5, 3674	17.4	148
54	Bidirectional plasticity of Purkinje cells matches temporal features of learning. *Journal of Neuroscience*, **2014**, 34, 1731-7	6.6	41
53	Visualizing mammalian brain area interactions by dual-axis two-photon calcium imaging. *Nature Neuroscience*, **2014**, 17, 1825-9	25.5	101
52	Zolpidem reduces hippocampal neuronal activity in freely behaving mice: a large scale calcium imaging study with miniaturized fluorescence microscope. *PLoS ONE*, **2014**, 9, e112068	3.7	24
51	High-speed laser microsurgery of alert fruit flies for fluorescence imaging of neural activity. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 18374-9	11.5	14
50	Photon shot noise limits on optical detection of neuronal spikes and estimation of spike timing. *Biophysical Journal*, **2013**, 104, 51-62	2.9	85
49	Engineering approaches to illuminating brain structure and dynamics. *Neuron*, **2013**, 80, 568-77	13.9	105
48	Long-term dynamics of CA1 hippocampal place codes. *Nature Neuroscience*, **2013**, 16, 264-6	25.5	602
47	Nanotools for neuroscience and brain activity mapping. *ACS Nano*, **2013**, 7, 1850-66	16.7	248
46	GABAergic lateral interactions tune the early stages of visual processing in Drosophila. *Neuron*, **2013**, 78, 1075-89	13.9	55
45	Optical strategies for sensing neuronal voltage using quantum dots and other semiconductor nanocrystals. *ACS Nano*, **2013**, 7, 4601-9	16.7	69

44	Sarcomere lengths in human extensor carpi radialis brevis measured by microendoscopy. *Muscle and Nerve*, **2013**, 48, 286-92	3.4	28
43	Enhanced Archaerhodopsin Fluorescent Protein Voltage Indicators. *PLoS ONE*, **2013**, 8, e66959	3.7	64
42	Two-photon optogenetic toolbox for fast inhibition, excitation and bistable modulation. *Nature Methods*, **2012**, 9, 1171-9	21.6	246
41	Improving FRET dynamic range with bright green and red fluorescent proteins. *Nature Methods*, **2012**, 9, 1005-12	21.6	551
40	In vivo microendoscopy of the hippocampus. *Cold Spring Harbor Protocols*, **2012**, 2012, 1092-9	1.2	24
39	Unified resolution bounds for conventional and stochastic localization fluorescence microscopy. *Physical Review Letters*, **2012**, 109, 168102	7.4	26
38	Estimation theoretic measure of resolution for stochastic localization microscopy. *Physical Review Letters*, **2012**, 109, 048102	7.4	31
37	Miniaturized integration of a fluorescence microscope. *Nature Methods*, **2011**, 8, 871-8	21.6	644
36	Defining the computational structure of the motion detector in Drosophila. *Neuron*, **2011**, 70, 1165-77	13.9	182
35	Time-lapse imaging of disease progression in deep brain areas using fluorescence microendoscopy. *Nature Medicine*, **2011**, 17, 223-8	50.5	197
34	Symmetries in stimulus statistics shape the form of visual motion estimators. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 12909-14	11.5	27
33	Journal club. A neuroscientist learns about algorithms for motor learning. *Nature*, **2010**, 463, 273	50.4	
32	In vivo fluorescence imaging with high-resolution microlenses. *Nature Methods*, **2009**, 6, 511-2	21.6	196
31	Motor behavior activates Bergmann glial networks. *Neuron*, **2009**, 62, 400-12	13.9	220
30	Automated analysis of cellular signals from large-scale calcium imaging data. *Neuron*, **2009**, 63, 747-60	13.9	443
29	In vivo brain imaging using a portable 2.9 g two-photon microscope based on a microelectromechanical systems scanning mirror. *Optics Letters*, **2009**, 34, 2309-11	3	120
28	Advances in light microscopy for neuroscience. *Annual Review of Neuroscience*, **2009**, 32, 435-506	17	217
27	Minimally invasive high-speed imaging of sarcomere contractile dynamics in mice and humans. *Nature*, **2008**, 454, 784-8	50.4	249

26	High-speed, miniaturized fluorescence microscopy in freely moving mice. *Nature Methods*, **2008**, 5, 935-8	21.6	289
25	Lock-and-key mechanisms of cerebellar memory recall based on rebound currents. *Journal of Neurophysiology*, **2008**, 100, 2328-47	3.2	29
24	Chronic and portable fluorescence microendoscopy in freely moving mice. *FASEB Journal*, **2008**, 22, 11.4	0.9	
23	A Portable Two-photon Fluorescence Microendoscope Based on a Two-dimensional Scanning Mirror **2007**,		4
22	Next-generation optical technologies for illuminating genetically targeted brain circuits. *Journal of Neuroscience*, **2006**, 26, 10380-6	6.6	568
21	Fast-scanning two-photon fluorescence imaging based on a microelectromechanical systems two-dimensional scanning mirror. *Optics Letters*, **2006**, 31, 2018-20	3	114
20	In vivo brain imaging using a portable 3.9 gram two-photon fluorescence microendoscope. *Optics Letters*, **2005**, 30, 2272-4	3	199
19	Retinal coding of visual scenes -- repetitive and redundant too?. *Neuron*, **2005**, 46, 357-9	13.9	4
18	Statistical kinetics of macromolecular dynamics. *Biophysical Journal*, **2005**, 89, 2277-85	2.9	67
17	Fiber-optic fluorescence imaging. *Nature Methods*, **2005**, 2, 941-50	21.6	521
16	Fiber optic in vivo imaging in the mammalian nervous system. *Current Opinion in Neurobiology*, **2004**, 14, 617-28	7.6	67
15	In vivo mammalian brain imaging using one- and two-photon fluorescence microendoscopy. *Journal of Neurophysiology*, **2004**, 92, 3121-33	3.2	289
14	Multiphoton endoscopy. *Optics Letters*, **2003**, 28, 902-4	3	234
13	Multineuronal firing patterns in the signal from eye to brain. *Neuron*, **2003**, 37, 499-511	13.9	134
12	Biological computation: amazing algorithms. *Nature*, **2002**, 416, 683	50.4	6
11	Gradient-index fiber-optic microprobes for minimally invasive in vivo low-coherence interferometry. *Optics Letters*, **2002**, 27, 1794-6	3	80
10	Force production by single kinesin motors. *Nature Cell Biology*, **2000**, 2, 718-23	23.4	436
9	Single kinesin molecules studied with a molecular force clamp. *Nature*, **1999**, 400, 184-9	50.4	819

8	Force and velocity measured for single molecules of RNA polymerase. *Science*, **1998**, 282, 902-7	33.3	682
7	Kinesin hydrolyses one ATP per 8-nm step. *Nature*, **1997**, 388, 386-90	50.4	622
6	Theory of continuum random walks and application to chemotaxis. *Physical Review E*, **1993**, 48, 2553-2568	2.4	279
5	An automated light scattering system scanning in two spherical angles. *Review of Scientific Instruments*, **1990**, 61, 2069-2072	1.7	2
4	Dual polarity voltage imaging reveals subthreshold dynamics and concurrent spiking patterns of multiple neuron-types		2
3	Fast two-photon volumetric imaging of an improved voltage indicator reveals electrical activity in deeply located neurons in the awake brain		16
2	Interhemispheric gamma synchrony between parvalbumin interneurons supports behavioral adaptation		2
1	Fast and statistically robust cell extraction from large-scale neural calcium imaging datasets		5