Loren L Looger

List of Publications by Year
in descending order

84 papers	22,574 citations	43973 48 h-index	58464 82 g-index
104 all docs	104 docs citations	104 times ranked	22694 citing authors

#	Article	IF	Citations
1	Ultrasensitive fluorescent proteins for imaging neuronal activity. Nature, 2013, 499, 295-300.	13.7	5,490
2	Imaging neural activity in worms, flies and mice with improved GCaMP calcium indicators. Nature Methods, 2009, 6, 875-881.	9.0	1,759
3	Shared and distinct transcriptomic cell types across neocortical areas. Nature, 2018, 563, 72-78.	13.7	1,323
4	Optimization of a GCaMP Calcium Indicator for Neural Activity Imaging. Journal of Neuroscience, 2012, 32, 13819-13840.	1.7	1,099
5	A Designer AAV Variant Permits Efficient Retrograde Access to Projection Neurons. Neuron, 2016, 92, 372-382.	3.8	1,007
6	High-performance calcium sensors for imaging activity in neuronal populations and microcompartments. Nature Methods, 2019, 16, 649-657.	9.0	843
7	An optimized fluorescent probe for visualizing glutamate neurotransmission. Nature Methods, 2013, 10, 162-170.	9.0	827
8	Sensitive red protein calcium indicators for imaging neural activity. ELife, 2016, 5, .	2.8	813
9	Functional imaging of hippocampal place cells at cellular resolution during virtual navigation. Nature Neuroscience, 2010, 13, 1433-1440.	7.1	742
10	Genetically encoded calcium indicators for multi-color neural activity imaging and combination with optogenetics. Frontiers in Molecular Neuroscience, 2013, 6, 2.	1.4	629
11	Thy1-GCaMP6 Transgenic Mice for Neuronal Population Imaging In Vivo. PLoS ONE, 2014, 9, e108697.	1.1	506
12	Labeling of active neural circuits in vivo with designed calcium integrators. Science, 2015, 347, 755-760.	6.0	377
13	A Cre-Dependent GCaMP3 Reporter Mouse for Neuronal Imaging *In Vivo*. Journal of Neuroscience, 2012, 32, 3131-3141.	1.7	341
14	Distinct descending motor cortex pathways and their roles in movement. Nature, 2018, 563, 79-84.	13.7	320
15	Real-time quantification of single RNA translation dynamics in living cells. Science, 2016, 352, 1425-1429.	6.0	317
16	Activity in motor–sensory projections reveals distributed coding in somatosensation. Nature, 2012, 489, 299-303.	13.7	314
17	Stability, affinity, and chromatic variants of the glutamate sensor iGluSnFR. Nature Methods, 2018, 15, 936-939.	9.0	310
18	Light-sheet functional imaging in fictively behaving zebrafish. Nature Methods, 2014, 11, 883-884.	9.0	294

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19	Mapping brain activity at scale with cluster computing. Nature Methods, 2014, 11, 941-950.	9.0	257
20	A genetically encoded fluorescent sensor for in vivo imaging of GABA. Nature Methods, 2019, 16, 763-770.	9.0	242
21	Construction and optimization of a family of genetically encoded metabolite sensors by semirational protein engineering. Protein Science, 2005, 14, 2304-2314.	3.1	229
22	Crystal Structures of the GCaMP Calcium Sensor Reveal the Mechanism of Fluorescence Signal Change and Aid Rational Design. Journal of Biological Chemistry, 2009, 284, 6455-6464.	1.6	226
23	Glia Accumulate Evidence that Actions Are Futile and Suppress Unsuccessful Behavior. Cell, 2019, 178, 27-43.e19.	13.5	226
24	High-performance probes for light and electron microscopy. Nature Methods, 2015, 12, 568-576.	9.0	225
25	High-density genotyping of immune-related loci identifies new SLE risk variants in individuals with Asian ancestry. Nature Genetics, 2016, 48, 323-330.	9.4	219
26	Conditions and Constraints for Astrocyte Calcium Signaling in the Hippocampal Mossy Fiber Pathway. Neuron, 2014, 82, 413-429.	3.8	206
27	Dysfunctional Calcium and Glutamate Signaling in Striatal Astrocytes from Huntington's Disease Model Mice. Journal of Neuroscience, 2016, 36, 3453-3470.	1.7	185
28	A genetically encoded single-wavelength sensor for imaging cytosolic and cell surface ATP. Nature Communications, 2019, 10, 711.	5.8	185
29	Fixation-resistant photoactivatable fluorescent proteins for CLEM. Nature Methods, 2015, 12, 215-218.	9.0	173
30	Genetically encoded neural activity indicators. Current Opinion in Neurobiology, 2012, 22, 18-23.	2.0	164
31	Dynamics of Ionic Shifts in Cortical Spreading Depression. Cerebral Cortex, 2015, 25, 4469-4476.	1.6	142
32	Extant fold-switching proteins are widespread. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 5968-5973.	3.3	129
33	Kilohertz frame-rate two-photon tomography. Nature Methods, 2019, 16, 778-786.	9.0	122
34	Neural signatures of dynamic stimulus selection in Drosophila. Nature Neuroscience, 2017, 20, 1104-1113.	7.1	113
35	Directed Evolution of a Selective and Sensitive Serotonin Sensor via Machine Learning. Cell, 2020, 183, 1986-2002.e26.	13.5	104
36	Excitation Spectra and Brightness Optimization of Two-Photon Excited Probes. Biophysical Journal, 2012, 102, 934-944.	0.2	100

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37	A genetically encoded, high‑signal‑to‑noise maltose sensor. Proteins: Structure, Function and Bioinformatics, 2011, 79, 3025-3036.	1.5	96
38	Functional Imaging and Optogenetics in *Drosophila*. Genetics, 2018, 208, 1291-1309.	1.2	94
39	A timecourse analysis of systemic and gonadal effects of temperature on sexual development of the red-eared slider turtle Trachemys scripta elegans. Developmental Biology, 2016, 420, 166-177.	0.9	91
40	Imaging Light Responses of Targeted Neuron Populations in the Rodent Retina. Journal of Neuroscience, 2011, 31, 2855-2867.	1.7	80
41	Temperature-dependent sex determination is mediated by pSTAT3 repression of *Kdm6b*. Science, 2020, 368, 303-306.	6.0	78
42	Integrated action of pheromone signals in promoting courtship behavior in male mice. ELife, 2014, 3, e03025.	2.8	77
43	Excitatory Synaptic Inputs to Mouse On-Off Direction-Selective Retinal Ganglion Cells Lack Direction Tuning. Journal of Neuroscience, 2014, 34, 3976-3981.	1.7	75
44	Single-Cell Reconstruction of Emerging Population Activity in an Entire Developing Circuit. Cell, 2019, 179, 355-372.e23.	13.5	72
45	Quantitative *in vivo* imaging of neuronal glucose concentrations with a genetically encoded fluorescence lifetime sensor. Journal of Neuroscience Research, 2019, 97, 946-960.	1.3	67
46	Diverse protocols for correlative super-resolution fluorescence imaging and electron microscopy of chemically fixed samples. Nature Protocols, 2017, 12, 916-946.	5.5	66
47	Multiplex imaging relates quantal glutamate release to presynaptic Ca2+ homeostasis at multiple synapses in situ. Nature Communications, 2019, 10, 1414.	5.8	66
48	A Neuron-Based Screening Platform for Optimizing Genetically-Encoded Calcium Indicators. PLoS ONE, 2013, 8, e77728.	1.1	66
49	Structure of the Escherichia coli Phosphonate Binding Protein PhnD and Rationally Optimized Phosphonate Biosensors. Journal of Molecular Biology, 2011, 414, 356-369.	2.0	60
50	Stimulation-Evoked Ca^{2+} Signals in Astrocytic Processes at Hippocampal CA3–CA1 Synapses of Adult Mice Are Modulated by Glutamate and ATP. Journal of Neuroscience, 2015, 35, 3016-3021.	1.7	56
51	Molecularly Defined Subplate Neurons Project Both to Thalamocortical Recipient Layers and Thalamus. Cerebral Cortex, 2017, 27, 4759-4768.	1.6	55
52	A Low Affinity GCaMP3 Variant (GCaMPer) for Imaging the Endoplasmic Reticulum Calcium Store. PLoS ONE, 2015, 10, e0139273.	1.1	51
53	Determining the pharmacokinetics of nicotinic drugs in the endoplasmic reticulum using biosensors. Journal of General Physiology, 2019, 151, 738-757.	0.9	50
54	Confirmation of five novel susceptibility loci for Systemic Lupus Erythematosus (SLE) and integrated network analysis of 82 SLE susceptibility loci. Human Molecular Genetics, 2017, 26, ddx026.	1.4	47

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55	Receptive field properties of bipolar cell axon terminals in direction-selective sublaminas of the mouse retina. Journal of Neurophysiology, 2014, 112, 1950-1962.	0.9	46
56	Direct InÂVivo Manipulation and Imaging of Calcium Transients in Neutrophils Identify a Critical Role for Leading-Edge Calcium Flux. Cell Reports, 2015, 13, 2107-2117.	2.9	45
57	jYCaMP: an optimized calcium indicator for two-photon imaging at fiber laser wavelengths. Nature Methods, 2020, 17, 694-697.	9.0	45
58	Allâ€optical functional synaptic connectivity mapping in acute brain slices using the calcium integrator CaMPARI. Journal of Physiology, 2017, 595, 1465-1477.	1.3	42
59	Aberrant Calcium Signaling in Astrocytes Inhibits Neuronal Excitability in a Human Down Syndrome Stem Cell Model. Cell Reports, 2018, 24, 355-365.	2.9	39
60	Optimized Vivid-derived Magnets photodimerizers for subcellular optogenetics in mammalian cells. ELife, 2020, 9, .	2.8	37
61	Amino acid signatures of HLA Class-I and II molecules are strongly associated with SLE susceptibility and autoantibody production in Eastern Asians. PLoS Genetics, 2019, 15, e1008092.	1.5	36
62	The neuropeptide Drosulfakinin regulates social isolation-induced aggression in<i>Drosophila</i>. Journal of Experimental Biology, 2020, 223, .	0.8	33
63	Inaccurate secondary structure predictions often indicate protein fold switching. Protein Science, 2019, 28, 1487-1493.	3.1	31
64	GFP-Aequorin Protein Sensor for ExÂVivo and InÂVivo Imaging of Ca 2+ Dynamics in High-Ca 2+ Organelles. Cell Chemical Biology, 2016, 23, 738-745.	2.5	30
65	Combined protein- and nucleic acid-level effects of rs1143679 (R77H), a lupus-predisposing variant within ITGAM. Human Molecular Genetics, 2014, 23, 4161-4176.	1.4	25
66	InÂvivo glucose imaging in multiple model organisms with an engineered single-wavelength sensor. Cell Reports, 2021, 35, 109284.	2.9	24
67	The functional organization of excitatory synaptic input to place cells. Nature Communications, 2021, 12, 3558.	5.8	22
68	Nanoscopic Visualization of Restricted Nonvolume Cholinergic and Monoaminergic Transmission with Genetically Encoded Sensors. Nano Letters, 2020, 20, 4073-4083.	4.5	18
69	A highâ€throughput predictive method for sequenceâ€similar fold switchers. Biopolymers, 2021, 112, e23416.	1.2	17
70	Green-to-Red Photoconversion of GCaMP. PLoS ONE, 2015, 10, e0138127.	1.1	17
71	Biosensors Show the Pharmacokinetics of S-Ketamine in the Endoplasmic Reticulum. Frontiers in Cellular Neuroscience, 2019, 13, 499.	1.8	14
72	Fluorescence activation mechanism and imaging of drug permeation with new sensors for smoking-cessation ligands. ELife, 2022, 11, .	2.8	14

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73	Mechanistic Characterization of RASGRP1 Variants Identifies an hnRNP-K-Regulated Transcriptional Enhancer Contributing to SLE Susceptibility. Frontiers in Immunology, 2019, 10, 1066.	2.2	13
74	The Oscillating Stimulus Transporter Assay, OSTA: Quantitative Functional Imaging of Transporter Protein Activity in Time and Frequency Domains. Molecular Cell, 2016, 64, 199-212.	4.5	12
75	Lupus Susceptibility Region Containing <i>CDKN1B</i> rs34330 Mechanistically Influences Expression and Function of Multiple Target Genes, Also Linked to Proliferation and Apoptosis. Arthritis and Rheumatology, 2021, 73, 2303-2313.	2.9	11
76	A sequenceâ€based method for predicting extant fold switchers that undergo Î±â€helixÂâ€"Î²â€strand transitions. Biopolymers, 2021, 112, e23471.	1.2	11
77	Three Mutations Convert the Selectivity of a Protein Sensor from Nicotinic Agonists to S-Methadone for Use in Cells, Organelles, and Biofluids. Journal of the American Chemical Society, 2022, 144, 8480-8486.	6.6	6
78	Voices in methods development. Nature Methods, 2019, 16, 945-951.	9.0	5
79	Evaluation of multi-color genetically encoded Ca2+ indicators in filamentous fungi. Fungal Genetics and Biology, 2021, 149, 103540.	0.9	2
80	<i>In Vivo</i> Glucose Imaging in Multiple Model Organisms with an Engineered Single-Wavelength Sensor. SSRN Electronic Journal, 0, , .	0.4	2
81	Optogenetics. , 2021, , 283-302.		1
82	Development and Applications of Fluorescent Proteins for Correlative Light and Electron Microscopy. Microscopy and Microanalysis, 2018, 24, 2318-2319.	0.2	0
83	Crystal structures of the GCaMP calcium sensor protein reveal the mechanism of fluorescence signal change and aid rational design. FASEB Journal, 2009, 23, 517.1.	0.2	0
84	Falling apart. ELife, 2016, 5, .	2.8	0