Eric Betzig

List of Publications by Year
in descending order

82 papers	25,000 citations	28190 55 h-index	58464 82 g-index
98 all docs	98 docs citations	98 times ranked	25644 citing authors

#	Article	IF	Citations
1	Imaging Intracellular Fluorescent Proteins at Nanometer Resolution. Science, 2006, 313, 1642-1645.	6.0	7,580
2	Lattice light-sheet microscopy: Imaging molecules to embryos at high spatiotemporal resolution. Science, 2014, 346, 1257998.	6.0	1,567
3	High-density mapping of single-molecule trajectories with photoactivated localization microscopy. Nature Methods, 2008, 5, 155-157.	9.0	1,104
4	Rapid three-dimensional isotropic imaging of living cells using Bessel beam plane illumination. Nature Methods, 2011, 8, 417-423.	9.0	1,006
5	Applying systems-level spectral imaging and analysis to reveal the organelle interactome. Nature, 2017, 546, 162-167.	13.7	828
6	Live-cell photoactivated localization microscopy of nanoscale adhesion dynamics. Nature Methods, 2008, 5, 417-423.	9.0	796
7	Extended-resolution structured illumination imaging of endocytic and cytoskeletal dynamics. Science, 2015, 349, aab3500.	6.0	585
8	Adaptive optics via pupil segmentation for high-resolution imaging in biological tissues. Nature Methods, 2010, 7, 141-147.	9.0	546
9	Single-Molecule Dynamics of Enhanceosome Assembly in Embryonic Stem Cells. Cell, 2014, 156, 1274-1285.	13.5	532
10	Dual-color superresolution imaging of genetically expressed probes within individual adhesion complexes. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 20308-20313.	3.3	478
11	Visualizing Intracellular Organelle and Cytoskeletal Interactions at Nanoscale Resolution on Millisecond Timescales. Cell, 2018, 175, 1430-1442.e17.	13.5	427
12	Observing the cell in its native state: Imaging subcellular dynamics in multicellular organisms. Science, 2018, 360, .	6.0	420
13	Imaging Live-Cell Dynamics and Structure at the Single-Molecule Level. Molecular Cell, 2015, 58, 644-659.	4.5	419
14	Increased spatiotemporal resolution reveals highly dynamic dense tubular matrices in the peripheral ER. Science, 2016, 354, .	6.0	361
15	Regulation of RNA granule dynamics by phosphorylation of serine-rich, intrinsically disordered proteins in C. elegans. ELife, 2014, 3, e04591.	2.8	323
16	Self-Organization of the Escherichia coli Chemotaxis Network Imaged with Super-Resolution Light Microscopy. PLoS Biology, 2009, 7, e1000137.	2.6	310
17	Noninvasive Imaging beyond the Diffraction Limit of 3D Dynamics in Thickly Fluorescent Specimens. Cell, 2012, 151, 1370-1385.	13.5	301
18	A Localized Wnt Signal Orients Asymmetric Stem Cell Division in Vitro. Science, 2013, 339, 1445-1448.	6.0	296

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19	3D live fluorescence imaging of cellular dynamics using Bessel beam plane illumination microscopy. Nature Protocols, 2014, 9, 1083-1101.	5.5	290
20	Cortical column and whole-brain imaging with molecular contrast and nanoscale resolution. Science, 2019, 363, .	6.0	277
21	Actin Depletion Initiates Events Leading to Granule Secretion at the Immunological Synapse. Immunity, 2015, 42, 864-876.	6.6	271
22	High-density three-dimensional localization microscopy across large volumes. Nature Methods, 2016, 13, 359-365.	9.0	262
23	Correlative three-dimensional super-resolution and block-face electron microscopy of whole vitreously frozen cells. Science, 2020, 367, .	6.0	255
24	Rapid adaptive optical recovery of optimal resolution over large volumes. Nature Methods, 2014, 11, 625-628.	9.0	253
25	Triggering a Cell Shape Change by Exploiting Preexisting Actomyosin Contractions. Science, 2012, 335, 1232-1235.	6.0	251
26	Single-Molecule Discrimination of Discrete Perisynaptic and Distributed Sites of Actin Filament Assembly within Dendritic Spines. Neuron, 2010, 67, 86-99.	3.8	248
27	Multidimensional traction force microscopy reveals out-of-plane rotational moments about focal adhesions. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 881-886.	3.3	239
28	Engulfed cadherin fingers are polarized junctional structures between collectively migrating endothelialÂcells. Nature Cell Biology, 2016, 18, 1311-1323.	4.6	230
29	Visualizing dynamic microvillar search and stabilization during ligand detection by T cells. Science, 2017, 356, .	6.0	225
30	Direct wavefront sensing for high-resolution in vivo imaging in scattering tissue. Nature Communications, 2015, 6, 7276.	5.8	208
31	High-speed, low-photodamage nonlinear imaging using passive pulse splitters. Nature Methods, 2008, 5, 197-202.	9.0	207
32	3D imaging of Sox2 enhancer clusters in embryonic stem cells. ELife, 2014, 3, e04236.	2.8	204
33	Carbofluoresceins and Carborhodamines as Scaffolds for High-Contrast Fluorogenic Probes. ACS Chemical Biology, 2013, 8, 1303-1310.	1.6	189
34	Characterization and adaptive optical correction of aberrations during in vivo imaging in the mouse cortex. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 22-27.	3.3	184
35	Formin-generated actomyosin arcs propel T cell receptor microcluster movement at the immune synapse. Journal of Cell Biology, 2016, 215, 383-399.	2.3	181
36	Nonmuscle Myosin II Isoforms Coassemble in Living Cells. Current Biology, 2014, 24, 1160-1166.	1.8	174

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37	A contractile and counterbalancing adhesion system controls the 3D shape of crawling cells. Journal of Cell Biology, 2014, 205, 83-96.	2.3	170
38	Single Molecules, Cells, and Superâ€Resolution Optics (Nobel Lecture). Angewandte Chemie - International Edition, 2015, 54, 8034-8053.	7.2	165
39	Optical spectroscopy of a GaAs/AlGaAs quantum wire structure using nearâ€field scanning optical microscopy. Applied Physics Letters, 1994, 64, 1421-1423.	1.5	152
40	Cytoskeletal actin dynamics shape a ramifying actin network underpinning immunological synapse formation. Science Advances, 2017, 3, e1603032.	4.7	143
41	A plasma membrane template for macropinocytic cups. ELife, 2016, 5, .	2.8	140
42	Membrane dynamics of dividing cells imaged by lattice light-sheet microscopy. Molecular Biology of the Cell, 2016, 27, 3418-3435.	0.9	121
43	Advances in the speed and resolution of light microscopy. Current Opinion in Neurobiology, 2008, 18, 605-616.	2.0	117
44	Facile and General Synthesis of Photoactivatable Xanthene Dyes. Angewandte Chemie - International Edition, 2011, 50, 11206-11209.	7.2	116
45	Histone H3 Threonine Phosphorylation Regulates Asymmetric Histone Inheritance in the Drosophila Male Germline. Cell, 2015, 163, 920-933.	13.5	110
46	Design and implementation of a low temperature nearâ€field scanning optical microscope. Review of Scientific Instruments, 1994, 65, 626-631.	0.6	108
47	Actin-based protrusions of migrating neutrophils are intrinsically lamellar and facilitate direction changes. ELife, 2017, 6, .	2.8	107
48	Dynamic super-resolution structured illumination imaging in the living brain. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 9586-9591.	3.3	103
49	Actin dynamics and competition for myosin monomer govern the sequential amplification of myosin filaments. Nature Cell Biology, 2017, 19, 85-93.	4.6	96
50	Vinculin is required for cell polarization, migration, and extracellular matrix remodeling in 3D collagen. FASEB Journal, 2015, 29, 4555-4567.	0.2	90
51	Subnuclear segregation of genes and core promoter factors in myogenesis. Genes and Development, 2011, 25, 569-580.	2.7	83
52	Myosin 18A Coassembles with Nonmuscle Myosin 2 to Form Mixed Bipolar Filaments. Current Biology, 2015, 25, 942-948.	1.8	83
53	Augmin accumulation on long-lived microtubules drives amplification and kinetochore-directed growth. Journal of Cell Biology, 2019, 218, 2150-2168.	2.3	75
54	Real-time imaging of Huntingtin aggregates diverting target search and gene transcription. ELife, 2016, 5, .	2.8	74

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55	Highly photostable, reversibly photoswitchable fluorescent protein with high contrast ratio for live-cell superresolution microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10364-10369.	3.3	69
56	Cytoskeletal Control of Antigen-Dependent T Cell Activation. Cell Reports, 2019, 26, 3369-3379.e5.	2.9	68
57	3D ATAC-PALM: super-resolution imaging of the accessible genome. Nature Methods, 2020, 17, 430-436.	9.0	62
58	Pupil-segmentation-based adaptive optical microscopy with full-pupil illumination. Optics Letters, 2011, 36, 4206.	1.7	58
59	Excitation strategies for optical lattice microscopy. Optics Express, 2005, 13, 3021.	1.7	55
60	High-resolution imaging reveals how the spindle midzone impacts chromosome movement. Journal of Cell Biology, 2019, 218, 2529-2544.	2.3	55
61	Three-dimensional tracking of plus-tips by lattice light-sheet microscopy permits the quantification of microtubule growth trajectories within the mitotic apparatus. Journal of Biomedical Optics, 2015, 20, 1.	1.4	49
62	Contractile actomyosin arcs promote the activation of primary mouse T cells in a ligand-dependent manner. PLoS ONE, 2017, 12, e0183174.	1.1	43
63	4D cell biology: big data image analytics and lattice light-sheet imaging reveal dynamics of clathrin-mediated endocytosis in stem cellâ€“derived intestinal organoids. Molecular Biology of the Cell, 2018, 29, 2959-2968.	0.9	42
64	Zyxin regulates endothelial von Willebrand factor secretion by reorganizing actin filaments around exocytic granules. Nature Communications, 2017, 8, 14639.	5.8	37
65	Nobel Lecture: Single molecules, cells, and super-resolution optics. Reviews of Modern Physics, 2015, 87, 1153-1168.	16.4	36
66	Cytoskeletal actin patterns shape mast cell activation. Communications Biology, 2019, 2, 93.	2.0	35
67	Asymmetric formation of coated pits on dorsal and ventral surfaces at the leading edges of motile cells and on protrusions of immobile cells. Molecular Biology of the Cell, 2015, 26, 2044-2053.	0.9	34
68	Response to Comment on â€œExtended-resolution structured illumination imaging of endocytic and cytoskeletal dynamicsâ€• Science, 2016, 352, 527-527.	6.0	33
69	Software for lattice light-sheet imaging of FRET biosensors, illustrated with a new Rap1 biosensor. Journal of Cell Biology, 2019, 218, 3153-3160.	2.3	32
70	De novo endocytic clathrin coats develop curvature at early stages of their formation. Developmental Cell, 2021, 56, 3146-3159.e5.	3.1	28
71	V-1 regulates capping protein activity in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6610-E6619.	3.3	26
72	Cellular bases of olfactory circuit assembly revealed by systematic time-lapse imaging. Cell, 2021, 184, 5107-5121.e14.	13.5	25

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73	Flagellar membrane fusion and protein exchange in trypanosomes; a new form of cell-cell communication?. F1000Research, 2016, 5, 682.	0.8	25
74	Lamellar projections in the endolymphatic sac act as a relief valve to regulate inner ear pressure. ELife, 2018, 7, .	2.8	23
75	Fast structural responses of gap junction membrane domains to AB5 toxins. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E4125-33.	3.3	11
76	Einzelne MolekÃ¼le, Zellen und superhochauflÃ¶sende Optik (Nobelâ€Aufsatz). Angewandte Chemie, 2015, 127, 8146-8166.	1.6	9
77	3D Deep Convolutional Neural Networks in Lattice Light-Sheet Data Puncta Segmentation. , 2019, , .		4
78	DEVELOPING PHOTOACTIVATED LOCALIZATION MICROSCOPY (PALM). , 2007, , .		3
79	Top tips on scanning probes. Physics World, 1994, 7, 24-24.	0.0	2
80	Superresolution microscopy reveals actomyosin dynamics in medioapical arrays. Molecular Biology of the Cell, 2022, 33, mbcE21110537.	0.9	2
81	Imaging Cellular Structure and Dynamics from Molecules to Organisms. Microscopy and Microanalysis, 2017, 23, 2-3.	0.2	1
82	Dual-color superresolution imaging using genetically expressed probes. , 2008, , .		0