Steven M Block

List of Publications by Year
in descending order

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101 papers	23,134 citations	16411 64 h-index	34900 98 g-index
105 all docs	105 docs citations	105 times ranked	11796 citing authors

#	Article	IF	Citations
1	Comprehensive sequence-to-function mapping of cofactor-dependent RNA catalysis in the glmS ribozyme. Nature Communications, 2020, 11, 1663.	5.8	21
2	KIF15 nanomechanics and kinesin inhibitors, with implications for cancer chemotherapeutics. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E4613-E4622.	3.3	40
3	Self-cleavage of the <i>glmS</i> ribozyme core is controlled by a fragile folding element. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 11976-11981.	3.3	14
4	Real-time observation of polymerase-promoter contact remodeling during transcription initiation. Nature Communications, 2017, 8, 1178.	5.8	12
5	Intraflagellar transport velocity is governed by the number of active KIF17 and KIF3AB motors and their motility properties under load. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E6830-E6838.	3.3	50
6	Observing Single RNA Polymerase Molecules Down to Base-Pair Resolution. Methods in Molecular Biology, 2017, 1486, 391-409.	0.4	3
7	The Mechanochemical Cycle of Mammalian Kinesin-2 KIF3A/B under Load. Current Biology, 2015, 25, 1166-1175.	1.8	75
8	Factor-dependent processivity in human eIF4A DEAD-box helicase. Science, 2015, 348, 1486-1488.	6.0	76
9	Real-time observation of the initiation of RNA polymerase II transcription. Nature, 2015, 525, 274-277.	13.7	90
10	Direct observation of processive exoribonuclease motion using optical tweezers. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15101-15106.	3.3	28
11	Examining kinesin processivity within a general gating framework. ELife, 2015, 4, .	2.8	158
12	Observation of long-range tertiary interactions during ligand binding by the TPP riboswitch aptamer. ELife, 2015, 4, .	2.8	31
13	Transcription factors TFIIF and TFIIS promote transcript elongation by RNA polymerase II by synergistic and independent mechanisms. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 6642-6647.	3.3	68
14	A pause sequence enriched at translation start sites drives transcription dynamics in vivo. Science, 2014, 344, 1042-1047.	6.0	280
15	A DNA-based molecular probe for optically reporting cellular traction forces. Nature Methods, 2014, 11, 1229-1232.	9.0	171
16	Reconstructing Folding Energy Landscapes by Single-Molecule Force Spectroscopy. Annual Review of Biophysics, 2014, 43, 19-39.	4.5	200
17	Kinesin processivity is gated by phosphate release. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14136-14140.	3.3	113
18	TFIIF and TFIIS Enhance the Mechanical Persistence of Transcript Elongation by RNA Polymerase II. Biophysical Journal, 2014, 106, 486a.	0.2	2

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19	Single-molecule studies of riboswitch folding. Biochimica Et Biophysica Acta - Gene Regulatory Mechanisms, 2014, 1839, 1030-1045.	0.9	49
20	Single-molecule studies of RNAPII elongation. Biochimica Et Biophysica Acta - Gene Regulatory Mechanisms, 2013, 1829, 29-38.	0.9	25
21	Efficient reconstitution of transcription elongation complexes for single-molecule studies of eukaryotic RNA polymerase II. Transcription, 2012, 3, 146-153.	1.7	20
22	Folding energy landscape of the thiamine pyrophosphate riboswitch aptamer. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 1485-1489.	3.3	71
23	Direct Observation of Cotranscriptional Folding in an Adenine Riboswitch. Science, 2012, 338, 397-400.	6.0	168
24	Trigger loop dynamics mediate the balance between the transcriptional fidelity and speed of RNA polymerase II. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 6555-6560.	3.3	118
25	Binding and Translocation of Termination Factor Rho Studied at the Single-Molecule Level. Journal of Molecular Biology, 2012, 423, 664-676.	2.0	50
26	Electrostatics of Nucleic Acid Folding under Conformational Constraint. Journal of the American Chemical Society, 2012, 134, 4607-4614.	6.6	30
27	A universal pathway for kinesin stepping. Nature Structural and Molecular Biology, 2011, 18, 1020-1027.	3.6	182
28	Single-Molecule Studies of RNA Polymerase: One Singular Sensation, Every Little Step It Takes. Molecular Cell, 2011, 41, 249-262.	4.5	95
29	Applied Force Provides Insight into Transcriptional Pausing and Its Modulation by Transcription Factor NusA. Molecular Cell, 2011, 44, 635-646.	4.5	47
30	Optical tweezers study life under tension. Nature Photonics, 2011, 5, 318-321.	15.6	354
31	E. coli NusG Inhibits Backtracking and Accelerates Pause-Free Transcription by Promoting Forward Translocation of RNA Polymerase. Journal of Molecular Biology, 2010, 399, 17-30.	2.0	108
32	An Optical Apparatus for Rotation and Trapping. Methods in Enzymology, 2010, 475, 377-404.	0.4	45
33	Direct measurements of kinesin torsional properties reveal flexible domains and occasional stalk reversals during stepping. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 17007-17012.	3.3	39
34	Direct observation of the binding state of the kinesin head to the microtubule. Nature, 2009, 461, 125-128.	13.7	106
35	On the Origin of Kinesin Limping. Biophysical Journal, 2009, 97, 1663-1670.	0.2	27
36	Force and Premature Binding of ADP Can Regulate the Processivity of Individual Eg5 Dimers. Biophysical Journal, 2009, 97, 1671-1677.	0.2	32

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37	Folding and unfolding single RNA molecules under tension. Current Opinion in Chemical Biology, 2008, 12, 640-646.	2.8	92
38	Single-Molecule Studies of RNA Polymerase: Motoring Along. Annual Review of Biochemistry, 2008, 77, 149-176.	5.0	179
39	Kinesin Steps Do Not Alternate in Size. Biophysical Journal, 2008, 94, L20-L22.	0.2	23
40	Direct Observation of Hierarchical Folding in Single Riboswitch Aptamers. Science, 2008, 319, 630-633.	6.0	361
41	Precision steering of an optical trap by electro-optic deflection. Optics Letters, 2008, 33, 599.	1.7	64
42	Applied Force Reveals Mechanistic and Energetic Details of Transcription Termination. Cell, 2008, 132, 971-982.	13.5	168
43	Not So Lame After All: Kinesin Still Walks with a Hobbled Head. Journal of General Physiology, 2007, 130, 441-444.	0.9	6
44	High-resolution single-molecule optical trapping measurements of transcription with basepair accuracy: instrumentation and methods. , 2007, , .		1
45	High-Resolution, Single-Molecule Measurements of Biomolecular Motion. Annual Review of Biophysics and Biomolecular Structure, 2007, 36, 171-190.	18.3	425
46	Kinesin Motor Mechanics: Binding, Stepping, Tracking, Gating, and Limping. Biophysical Journal, 2007, 92, 2986-2995.	0.2	315
47	Not So Lame After All: Kinesin Still Walks with a Hobbled Head. Journal of Cell Biology, 2007, 179, i10-i10.	2.3	0
48	Single-Molecule, Motion-Based DNA Sequencing Using RNA Polymerase. Science, 2006, 313, 801-801.	6.0	102
49	Sequence-Resolved Detection of Pausing by Single RNA Polymerase Molecules. Cell, 2006, 125, 1083-1094.	13.5	252
50	Pulling on the Nascent RNA during Transcription Does Not Alter Kinetics of Elongation or Ubiquitous Pausing. Molecular Cell, 2006, 23, 231-239.	4.5	54
51	Eg5 steps it up!. Cell Division, 2006, 1, 31.	1.1	62
52	Individual dimers of the mitotic kinesin motor Eg5 step processively and support substantial loads in vitro. Nature Cell Biology, 2006, 8, 470-476.	4.6	243
53	Nanomechanical measurements of the sequence-dependent folding landscapes of single nucleic acid hairpins. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 6190-6195.	3.3	397
54	Backsteps induced by nucleotide analogs suggest the front head of kinesin is gated by strain. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 8054-8059.	3.3	123

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55	Direct Measurement of the Full, Sequence-Dependent Folding Landscape of a Nucleic Acid. Science, 2006, 314, 1001-1004.	6.0	356
56	Direct observation of base-pair stepping by RNA polymerase. Nature, 2005, 438, 460-465.	13.7	797
57	Passive All-Optical Force Clamp for High-Resolution Laser Trapping. Physical Review Letters, 2005, 95, 208102.	2.9	201
58	Measurement of the effective focal shift in an optical trap. Optics Letters, 2005, 30, 1318.	1.7	82
59	Statistical Kinetics of Macromolecular Dynamics. Biophysical Journal, 2005, 89, 2277-2285.	0.2	76
60	Picocalorimetry of Transcription by RNA Polymerase. Biophysical Journal, 2005, 89, L61-L63.	0.2	58
61	Simultaneous, coincident optical trapping and single-molecule fluorescence. Nature Methods, 2004, 1, 133-139.	9.0	218
62	Optical trapping. Review of Scientific Instruments, 2004, 75, 2787-2809.	0.6	2,206
63	Forward and Reverse Motion of Single RecBCD Molecules on DNA. Biophysical Journal, 2004, 86, 1640-1648.	0.2	134
64	Combined optical trapping and single-molecule fluorescence. Journal of Biology, 2003, 2, 6.	2.7	90
65	Backtracking by single RNA polymerase molecules observed at near-base-pair resolution. Nature, 2003, 426, 684-687.	13.7	340
66	Resource Letter: LBOT-1: Laser-based optical tweezers. American Journal of Physics, 2003, 71, 201-215.	0.3	213
67	Probing the kinesin reaction cycle with a 2D optical force clamp. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 2351-2356.	3.3	264
68	Ubiquitous Transcriptional Pausing Is Independent of RNA Polymerase Backtracking. Cell, 2003, 115, 437-447.	13.5	306
69	Stepping and Stretching. Journal of Biological Chemistry, 2003, 278, 18550-18556.	1.6	159
70	Sequence-Dependent Pausing of Single Lambda Exonuclease Molecules. Science, 2003, 301, 1914-1918.	6.0	128
71	Kinesin Moves by an Asymmetric Hand-Over-Hand Mechanism. Science, 2003, 302, 2130-2134.	6.0	477
72	Coordination of opposite-polarity microtubule motors. Journal of Cell Biology, 2002, 156, 715-724.	2.3	254

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73	An Automated Two-Dimensional Optical Force Clamp for Single Molecule Studies. Biophysical Journal, 2002, 83, 491-501.	0.2	256
74	Force production by single kinesin motors. Nature Cell Biology, 2000, 2, 718-723.	4.6	524
75	Dynein-Mediated Cargo Transport in Vivo. Journal of Cell Biology, 2000, 148, 945-956.	2.3	211
76	Stretching of Single Collapsed DNA Molecules. Biophysical Journal, 2000, 78, 1965-1978.	0.2	253
77	Single kinesin molecules studied with a molecular force clamp. Nature, 1999, 400, 184-189.	13.7	946
78	Characterization of Photodamage to Escherichia coli in Optical Traps. Biophysical Journal, 1999, 77, 2856-2863.	0.2	622
79	Developmental Regulation of Vesicle Transport in Drosophila Embryos: Forces and Kinetics. Cell, 1998, 92, 547-557.	13.5	368
80	Kinesin: What Gives?. Cell, 1998, 93, 5-8.	13.5	103
81	[38] Versatile optical traps with feedback control. Methods in Enzymology, 1998, 298, 460-489.	0.4	133
82	Force and Velocity Measured for Single Molecules of RNA Polymerase. , 1998, 282, 902-907.		790
83	Leading the Procession: New Insights into Kinesin Motors. Journal of Cell Biology, 1998, 140, 1281-1284.	2.3	40
84	Kinesin hydrolyses one ATP per 8-nm step. Nature, 1997, 388, 386-390.	13.7	704
85	Real engines of creation. Nature, 1997, 386, 217-218.	13.7	52
86	Fifty Ways to Love Your Lever: Myosin Motors. Cell, 1996, 87, 151-157.	13.5	92
87	Nanometres and piconewtons: the macromolecular mechanics of kinesin. Trends in Cell Biology, 1995, 5, 169-175.	3.6	61
88	One small step for myosin.... Nature, 1995, 378, 132-133.	13.7	18
89	Optical trapping of metallic Rayleigh particles. Optics Letters, 1994, 19, 930.	1.7	717
90	Force and velocity measured for single kinesin molecules. Cell, 1994, 77, 773-784.	13.5	845

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91	Direct observation of kinesin stepping by optical trapping interferometry. Nature, 1993, 365, 721-727.	13.7	1,818
92	Making light work with optical tweezers. Nature, 1992, 360, 493-495.	13.7	176
93	Optical tweezers as a tool to study cellular function. Proceedings Annual Meeting Electron Microscopy Society of America, 1992, 50, 424-425.	0.0	0
94	Compliance of bacterial polyhooks measured with optical tweezers. Cytometry, 1991, 12, 492-496.	1.8	78
95	Bead movement by single kinesin molecules studied with optical tweezers. Nature, 1990, 348, 348-352.	13.7	973
96	Compliance of bacterial flagella measured with optical tweezers. Nature, 1989, 338, 514-518.	13.7	433
97	Computerized video analysis of tethered bacteria. Review of Scientific Instruments, 1987, 58, 418-423.	0.6	18
98	Movement of myosin fragments in vitro: Domains involved in force production. Cell, 1987, 48, 953-963.	13.5	88
99	[50] Myosin movement in Vitro: A quantitative assay using oriented actin cables from Nitella. Methods in Enzymology, 1986, 134, 531-544.	0.4	65
100	Successive incorporation of force-generating units in the bacterial rotary motor. Nature, 1984, 309, 470-472.	13.7	241
101	Impulse responses in bacterial chemotaxis. Cell, 1982, 31, 215-226.	13.5	280