

# Clare M Waterman

## List of Publications by Year in descending order

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108  
papers

18,583  
citations

16411

64  
h-index

26548

107  
g-index

118  
all docs

118  
docs citations

118  
times ranked

17667  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nanoscale architecture of integrin-based cell adhesions. <i>Nature</i> , 2010, 468, 580-584.	13.7	1,323
2	Mechanical Integration of Actin and Adhesion Dynamics in Cell Migration. <i>Annual Review of Cell and Developmental Biology</i> , 2010, 26, 315-333.	4.0	819
3	Interferometric fluorescent super-resolution microscopy resolves 3D cellular ultrastructure. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 3125-3130.	3.3	816
4	Conserved microtubule-actin interactions in cell movement and morphogenesis. <i>Nature Cell Biology</i> , 2003, 5, 599-609.	4.6	794
5	Two Distinct Actin Networks Drive the Protrusion of Migrating Cells. <i>Science</i> , 2004, 305, 1782-1786.	6.0	721
6	Force Fluctuations within Focal Adhesions Mediate ECM-Rigidity Sensing to Guide Directed Cell Migration. <i>Cell</i> , 2012, 151, 1513-1527.	13.5	716
7	Analysis of the myosin-II-responsive focal adhesion proteome reveals a role for $\beta$ -Pix in negative regulation of focal adhesion maturation. <i>Nature Cell Biology</i> , 2011, 13, 383-393.	4.6	553
8	Spatiotemporal Feedback between Actomyosin and Focal-Adhesion Systems Optimizes Rapid Cell Migration. <i>Cell</i> , 2006, 125, 1361-1374.	13.5	522
9	High Resolution Traction Force Microscopy Based on Experimental and Computational Advances. <i>Biophysical Journal</i> , 2008, 94, 207-220.	0.2	514
10	Myosin II activity regulates vinculin recruitment to focal adhesions through FAK-mediated paxillin phosphorylation. <i>Journal of Cell Biology</i> , 2010, 188, 877-890.	2.3	483
11	Differential Transmission of Actin Motion Within Focal Adhesions. <i>Science</i> , 2007, 315, 111-115.	6.0	460
12	Actomyosin-based Retrograde Flow of Microtubules in the Lamella of Migrating Epithelial Cells Influences Microtubule Dynamic Instability and Turnover and Is Associated with Microtubule Breakage and Treadmilling. <i>Journal of Cell Biology</i> , 1997, 139, 417-434.	2.3	449
13	Traction stress in focal adhesions correlates biphasically with actin retrograde flow speed. <i>Journal of Cell Biology</i> , 2008, 183, 999-1005.	2.3	422
14	Integration of actin dynamics and cell adhesion by a three-dimensional, mechanosensitive molecular clutch. <i>Nature Cell Biology</i> , 2015, 17, 955-963.	4.6	421
15	Importin $\beta$ Is a Mitotic Target of the Small GTPase Ran in Spindle Assembly. <i>Cell</i> , 2001, 104, 95-106.	13.5	373
16	Caveolin-1 regulates cell polarization and directional migration through Src kinase and Rho GTPases. <i>Journal of Cell Biology</i> , 2007, 177, 683-694.	2.3	300
17	Spatially isotropic four-dimensional imaging with dual-view plane illumination microscopy. <i>Nature Biotechnology</i> , 2013, 31, 1032-1038.	9.4	290
18	Integrin-dependent actomyosin contraction regulates epithelial cell scattering. <i>Journal of Cell Biology</i> , 2005, 171, 153-164.	2.3	285

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19	Cell migration without a lamellipodium. <i>Journal of Cell Biology</i> , 2005, 168, 619-631.	2.3	257
20	Molecular mechanism of vinculin activation and nanoscale spatial organization in focal adhesions. <i>Nature Cell Biology</i> , 2015, 17, 880-892.	4.6	247
21	Positive feedback interactions between microtubule and actin dynamics during cell motility. <i>Current Opinion in Cell Biology</i> , 1999, 11, 61-67.	2.6	245
22	Regulation of leading edge microtubule and actin dynamics downstream of Rac1. <i>Journal of Cell Biology</i> , 2003, 161, 845-851.	2.3	238
23	The interaction between cytoplasmic dynein and dynactin is required for fast axonal transport. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1997, 94, 12180-12185.	3.3	237
24	Vinculin-actin interaction couples actin retrograde flow to focal adhesions, but is dispensable for focal adhesion growth. <i>Journal of Cell Biology</i> , 2013, 202, 163-177.	2.3	230
25	NETosis proceeds by cytoskeleton and endomembrane disassembly and PAD4-mediated chromatin decondensation and nuclear envelope rupture. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 7326-7337.	3.3	219
26	Cellular Mechanisms of NETosis. <i>Annual Review of Cell and Developmental Biology</i> , 2020, 36, 191-218.	4.0	216
27	Regulation of Microtubule Destabilizing Activity of Op18/Stathmin Downstream of Rac1. <i>Journal of Biological Chemistry</i> , 2004, 279, 6196-6203.	1.6	209
28	PyK2 and FAK connections to p190Rho guanine nucleotide exchange factor regulate RhoA activity, focal adhesion formation, and cell motility. <i>Journal of Cell Biology</i> , 2008, 180, 187-203.	2.3	196
29	Dual-wavelength fluorescent speckle microscopy reveals coupling of microtubule and actin movements in migrating cells. <i>Journal of Cell Biology</i> , 2002, 158, 31-37.	2.3	194
30	QUANTITATIVE FLUORESCENT SPECKLE MICROSCOPY OF CYTOSKELETON DYNAMICS. <i>Annual Review of Biophysics and Biomolecular Structure</i> , 2006, 35, 361-387.	18.3	194
31	A Zyxin-Mediated Mechanism for Actin Stress Fiber Maintenance and Repair. <i>Developmental Cell</i> , 2010, 19, 365-376.	3.1	193
32	YAP Nuclear Localization in the Absence of Cell-Cell Contact Is Mediated by a Filamentous Actin-dependent, Myosin II- and Phospho-YAP-independent Pathway during Extracellular Matrix Mechanosensing. <i>Journal of Biological Chemistry</i> , 2016, 291, 6096-6110.	1.6	188
33	Cofilin Activity Downstream of Pak1 Regulates Cell Protrusion Efficiency by Organizing Lamellipodium and Lamella Actin Networks. <i>Developmental Cell</i> , 2007, 13, 646-662.	3.1	184
34	High-Resolution Traction Force Microscopy. <i>Methods in Cell Biology</i> , 2014, 123, 367-394.	0.5	181
35	Stiffness-controlled three-dimensional extracellular matrices for high-resolution imaging of cell behavior. <i>Nature Protocols</i> , 2012, 7, 2056-2066.	5.5	178
36	SNX9 Couples Actin Assembly to Phosphoinositide Signals and Is Required for Membrane Remodeling during Endocytosis. <i>Developmental Cell</i> , 2007, 13, 43-56.	3.1	177

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37	Focal loss of actin bundles causes microtubule redistribution and growth cone turning. <i>Journal of Cell Biology</i> , 2002, 157, 839-849.	2.3	176
38	Spatial regulation of CLASP affinity for microtubules by Rac1 and GSK3 $\beta$ in migrating epithelial cells. <i>Journal of Cell Biology</i> , 2005, 169, 929-939.	2.3	173
39	Local Cortical Tension by Myosin II Guides 3D Endothelial Cell Branching. <i>Current Biology</i> , 2009, 19, 260-265.	1.8	172
40	Protein Kinase D-Mediated Anterograde Membrane Trafficking Is Required for Fibroblast Motility. <i>Current Biology</i> , 2004, 14, 88-98.	1.8	160
41	Simultaneous mapping of filamentous actin flow and turnover in migrating cells by quantitative fluorescent speckle microscopy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 9660-9665.	3.3	155
42	mDia2 regulates actin and focal adhesion dynamics and organization in the lamella for efficient epithelial cell migration. <i>Journal of Cell Science</i> , 2007, 120, 3475-3487.	1.2	134
43	Microscopy in 3D: a biologist's toolbox. <i>Trends in Cell Biology</i> , 2011, 21, 682-691.	3.6	133
44	Guiding cell migration by tugging. <i>Current Opinion in Cell Biology</i> , 2013, 25, 619-626.	2.6	132
45	CENP-E combines a slow, processive motor and a flexible coiled coil to produce an essential motile kinetochore tether. <i>Journal of Cell Biology</i> , 2008, 181, 411-419.	2.3	129
46	Myosin II controls cellular branching morphogenesis and migration in three dimensions by minimizing cell-surface curvature. <i>Nature Cell Biology</i> , 2015, 17, 137-147.	4.6	109
47	Membrane/microtubule tip attachment complexes (TACs) allow the assembly dynamics of plus ends to push and pull membranes into tubulovesicular networks in interphase <i>Xenopus</i> egg extracts. <i>Journal of Cell Biology</i> , 1995, 130, 1161-1169.	2.3	108
48	Periodic Patterns of Actin Turnover in Lamellipodia and Lamellae of Migrating Epithelial Cells Analyzed by Quantitative Fluorescent Speckle Microscopy. <i>Biophysical Journal</i> , 2005, 89, 3456-3469.	0.2	103
49	Distinct ECM mechanosensing pathways regulate microtubule dynamics to control endothelial cell branching morphogenesis. <i>Journal of Cell Biology</i> , 2011, 192, 321-334.	2.3	100
50	Actomyosin Cortical Mechanical Properties in Nonadherent Cells Determined by Atomic Force Microscopy. <i>Biophysical Journal</i> , 2016, 110, 2528-2539.	0.2	100
51	Microtubules Remodel Actomyosin Networks in <i>Xenopus</i> Egg Extracts via Two Mechanisms of F-Actin Transport. <i>Journal of Cell Biology</i> , 2000, 150, 361-376.	2.3	98
52	Converging Populations of F-Actin Promote Breakage of Associated Microtubules to Spatially Regulate Microtubule Turnover in Migrating Cells. <i>Current Biology</i> , 2002, 12, 1891-1899.	1.8	98
53	Coupling of $\beta$ 2 integrins to actin by a mechanosensitive molecular clutch drives complement receptor-mediated phagocytosis. <i>Nature Cell Biology</i> , 2019, 21, 1357-1369.	4.6	98
54	Adaptive optics improves multiphoton super-resolution imaging. <i>Nature Methods</i> , 2017, 14, 869-872.	9.0	97

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55	Erk regulation of actin capping and bundling by Eps8 promotes cortex tension and leader bleb-based migration. <i>ELife</i> , 2015, 4, e08314.	2.8	96
56	Rac1-Dependent Phosphorylation and Focal Adhesion Recruitment of Myosin IIA Regulates Migration and Mechanosensing. <i>Current Biology</i> , 2015, 25, 175-186.	1.8	95
57	Actin retrograde flow actively aligns and orients ligand-engaged integrins in focal adhesions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 10648-10653.	3.3	95
58	Mechanosensing through Direct Binding of Tensed F-Actin by LIM Domains. <i>Developmental Cell</i> , 2020, 55, 468-482.e7.	3.1	94
59	Vinculin is required for cell polarization, migration, and extracellular matrix remodeling in 3D collagen. <i>FASEB Journal</i> , 2015, 29, 4555-4567.	0.2	90
60	Specification of Architecture and Function of Actin Structures by Actin Nucleation Factors. <i>Annual Review of Biophysics</i> , 2015, 44, 285-310.	4.5	85
61	Direction of actin flow dictates integrin LFA-1 orientation during leukocyte migration. <i>Nature Communications</i> , 2017, 8, 2047.	5.8	83
62	Pak1 regulates focal adhesion strength, myosin IIA distribution, and actin dynamics to optimize cell migration. <i>Journal of Cell Biology</i> , 2011, 193, 1289-1303.	2.3	82
63	Physical Constraints and Forces Involved in Phagocytosis. <i>Frontiers in Immunology</i> , 2020, 11, 1097.	2.2	81
64	NLRP3 Inflammasome Assembly in Neutrophils Is Supported by PAD4 and Promotes NETosis Under Sterile Conditions. <i>Frontiers in Immunology</i> , 2021, 12, 683803.	2.2	79
65	Adhesive F-actin Waves: A Novel Integrin-Mediated Adhesion Complex Coupled to Ventral Actin Polymerization. <i>PLoS ONE</i> , 2011, 6, e26631.	1.1	75
66	Orientation-specific responses to sustained uniaxial stretching in focal adhesion growth and turnover. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, E2352-61.	3.3	73
67	The molecular clutch model for mechanotransduction evolves. <i>Nature Cell Biology</i> , 2016, 18, 459-461.	4.6	73
68	The FAK- $\alpha$ Arp2/3 interaction promotes leading edge advance and haptosensing by coupling nascent adhesions to lamellipodia actin. <i>Molecular Biology of the Cell</i> , 2016, 27, 1085-1100.	0.9	73
69	Single-shot super-resolution total internal reflection fluorescence microscopy. <i>Nature Methods</i> , 2018, 15, 425-428.	9.0	57
70	Isolation of Focal Adhesion Proteins for Biochemical and Proteomic Analysis. <i>Methods in Molecular Biology</i> , 2011, 757, 297-323.	0.4	56
71	Filopodia and focal adhesions: An integrated system driving branching morphogenesis in neuronal pathfinding and angiogenesis. <i>Developmental Biology</i> , 2019, 451, 86-95.	0.9	56
72	Two Distinct Actin Networks Mediate Traction Oscillations to Confer Focal Adhesion Mechanosensing. <i>Biophysical Journal</i> , 2017, 112, 780-794.	0.2	54

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73	Rac1 and Aurora A regulate MCAK to polarize microtubule growth in migrating endothelial cells. <i>Journal of Cell Biology</i> , 2014, 206, 97-112.	2.3	53
74	Simultaneous multiview capture and fusion improves spatial resolution in wide-field and light-sheet microscopy. <i>Optica</i> , 2016, 3, 897.	4.8	53
75	Epidermal Growth Factor-induced Contraction Regulates Paxillin Phosphorylation to Temporally Separate Traction Generation from De-adhesion. <i>Molecular Biology of the Cell</i> , 2009, 20, 3155-3167.	0.9	49
76	Local pulsatile contractions are an intrinsic property of the myosin 2A motor in the cortical cytoskeleton of adherent cells. <i>Molecular Biology of the Cell</i> , 2017, 28, 240-251.	0.9	48
77	New Directions for Fluorescent Speckle Microscopy. <i>Current Biology</i> , 2002, 12, R633-R640.	1.8	47
78	Protrusion and actin assembly are coupled to the organization of lamellar contractile structures. <i>Experimental Cell Research</i> , 2010, 316, 2027-2041.	1.2	43
79	Sorting Nexin 27 Protein Regulates Trafficking of a p21-activated Kinase (PAK) Interacting Exchange Factor ( $\beta$ -Pix)-G Protein-coupled Receptor Kinase Interacting Protein (GIT) Complex via a PDZ Domain Interaction. <i>Journal of Biological Chemistry</i> , 2011, 286, 39403-39416.	1.6	42
80	Contractility, focal adhesion orientation, and stress fiber orientation drive cancer cell polarity and migration along wavy ECM substrates. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	39
81	Automated Screening of Microtubule Growth Dynamics Identifies MARK2 as a Regulator of Leading Edge Microtubules Downstream of Rac1 in Migrating Cells. <i>PLoS ONE</i> , 2012, 7, e41413.	1.1	39
82	Effects of brefeldin A-inhibited guanine nucleotide-exchange (BIG) 1 and KANK1 proteins on cell polarity and directed migration during wound healing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 19228-19233.	3.3	37
83	Inverted formin 2 in focal adhesions promotes dorsal stress fiber and fibrillar adhesion formation to drive extracellular matrix assembly. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E2447-56.	3.3	35
84	Signal analysis of total internal reflection fluorescent speckle microscopy (TIR-FSM) and wide-field epi-fluorescence FSM of the actin cytoskeleton and focal adhesions in living cells. <i>Journal of Microscopy</i> , 2004, 216, 138-152.	0.8	30
85	Decreased polarity and increased random motility in PtK1 epithelial cells correlate with inhibition of endosomal recycling. <i>Journal of Cell Science</i> , 2006, 119, 3571-3582.	1.2	29
86	Interdisciplinary Graduate Training in Teaching Labs. <i>Science</i> , 2012, 338, 1542-1543.	6.0	29
87	A High-Resolution Multimode Digital Microscope System. <i>Methods in Cell Biology</i> , 2007, 81, 187-218.	0.5	28
88	Advances in light-based imaging of three-dimensional cellular ultrastructure. <i>Current Opinion in Cell Biology</i> , 2012, 24, 125-133.	2.6	27
89	A Structural Model for Vinculin Insertion into PIP2-Containing Membranes and the Effect of Insertion on Vinculin Activation and Localization. <i>Structure</i> , 2017, 25, 264-275.	1.6	23
90	Spinning Disk Confocal Imaging of Neutrophil Migration in Zebrafish. <i>Methods in Molecular Biology</i> , 2014, 1124, 219-233.	0.4	21

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91	Cytosolic pressure provides a propulsive force comparable to actin polymerization during lamellipod protrusion. <i>Scientific Reports</i> , 2015, 5, 12314.	1.6	18
92	Incoherent structured illumination improves optical sectioning and contrast in multiphoton super-resolution microscopy. <i>Optics Express</i> , 2015, 23, 5327.	1.7	17
93	A B-cell actomyosin arc network couples integrin co-stimulation to mechanical force-dependent immune synapse formation. <i>ELife</i> , 2022, 11, .	2.8	13
94	MARK2 regulates directed cell migration through modulation of myosin II contractility and focal adhesion organization. <i>Current Biology</i> , 2022, 32, 2704-2718.e6.	1.8	12
95	Event Ordering in Live-Cell Imaging Determined from Temporal Cross-Correlation Asymmetry. <i>Biophysical Journal</i> , 2010, 98, 2432-2441.	0.2	11
96	Myosin II isoforms promote internalization of spatially distinct clathrin-independent endocytosis cargoes through modulation of cortical tension downstream of ROCK2. <i>Molecular Biology of the Cell</i> , 2021, 32, 226-236.	0.9	11
97	Production and presentation of digital movies. <i>Trends in Cell Biology</i> , 1997, 7, 503-506.	3.6	10
98	Mechanosensation: A Catch Bond That Only Hooks One Way. <i>Current Biology</i> , 2017, 27, R1158-R1160.	1.8	10
99	Survey of cancer cell anatomy in nonadhesive confinement reveals a role for filamin-A and fascin-1 in leader bleb-based migration. <i>Molecular Biology of the Cell</i> , 2021, 32, 1772-1791.	0.9	10
100	ARAP2 inhibits Akt independently of its effects on focal adhesions. <i>Biology of the Cell</i> , 2018, 110, 257-270.	0.7	8
101	How we discovered fluorescent speckle microscopy. <i>Molecular Biology of the Cell</i> , 2011, 22, 3940-3942.	0.9	7
102	Localization-Based Super-Resolution Imaging of Cellular Structures. <i>Methods in Molecular Biology</i> , 2013, 1046, 59-84.	0.4	7
103	Misregulation of ELK1, AP1, and E12 Transcription Factor Networks Is Associated with Melanoma Progression. <i>Cancers</i> , 2020, 12, 458.	1.7	5
104	Cortical Actin Tension, Elastic Modulus and Cytosolic Pressure in Fibroblasts Determined using Atomic Force Microscopy. <i>Biophysical Journal</i> , 2015, 108, 140a.	0.2	2
105	Reply to Liu: The disassembly of the actin cytoskeleton is an early event during NETosis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 22655-22656.	3.3	2
106	Illuminating Cell Adhesion: Modern Microscopy Approaches to Study Integrin-Based Focal Adhesions. , 2016, , 119-140.		1
107	Quantitative Fluorescent Speckle Microscopy of the Actin Cytoskeleton in Migrating Cells. <i>Microscopy and Microanalysis</i> , 2004, 10, 1234-1235.	0.2	0
108	Correction: Spatial regulation of CLASP affinity for microtubules by Rac1 and GSK3 <sup>β</sup> in migrating epithelial cells. <i>Journal of Cell Biology</i> , 2005, 171, 393-393.	2.3	0