James A Spudich

List of Publications by Year in Descending Order

121 papers	12,175 citations	55 h-index	110 g-index
128 ext. papers	13,651 ext. citations	17.2 avg, IF	6.45 L-index

#	Paper	IF	Citations
121	Altered Cardiac Energetics and Mitochondrial Dysfunction in Hypertrophic Cardiomyopathy. *Circulation*, **2021**, 144, 1714-1731	16.7	11
120	Nanomechanical Phenotypes in Cardiac Myosin-Binding Protein C Mutants That Cause Hypertrophic Cardiomyopathy. *ACS Nano*, **2021**, 15, 10203-10216	16.7	8
119	Hypertrophic cardiomyopathy □cardiac myosin mutation (P710R) leads to hypercontractility by disrupting super relaxed state. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	7
118	The Myosin Family of Mechanoenzymes: From Mechanisms to Therapeutic Approaches. *Annual Review of Biochemistry*, **2020**, 89, 667-693	29.1	16
117	Single Residue Variation in Skeletal Muscle Myosin Enables Direct and Selective Drug Targeting for Spasticity and Muscle Stiffness. *Cell*, **2020**, 183, 335-346.e13	56.2	4
116	The hypertrophic cardiomyopathy mutations R403Q and R663H increase the number of myosin heads available to interact with actin. *Science Advances*, **2020**, 6, eaax0069	14.3	19
115	Myosin motor domains carrying mutations implicated in early or late onset hypertrophic cardiomyopathy have similar properties. *Journal of Biological Chemistry*, **2019**, 294, 17451-17462	5.4	13
114	□Cardiac myosin hypertrophic cardiomyopathy mutations release sequestered heads and increase enzymatic activity. *Nature Communications*, **2019**, 10, 2685	17.4	26
113	Three perspectives on the molecular basis of hypercontractility caused by hypertrophic cardiomyopathy mutations. *Pflugers Archiv European Journal of Physiology*, **2019**, 471, 701-717	4.6	44
112	SETD3 is an actin histidine methyltransferase that prevents primary dystocia. *Nature*, **2019**, 565, 372-376	50.4	64
111	Dilated cardiomyopathy myosin mutants have reduced force-generating capacity. *Journal of Biological Chemistry*, **2018**, 293, 9017-9029	5.4	34
110	Deciphering the super relaxed state of human □cardiac myosin and the mode of action of mavacamten from myosin molecules to muscle fibers. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, E8143-E8152	11.5	117
109	Controlling load-dependent kinetics of □cardiac myosin at the single-molecule level. *Nature Structural and Molecular Biology*, **2018**, 25, 505-514	17.6	36
108	Hypertrophic cardiomyopathy and the myosin mesa: viewing an old disease in a new light. *Biophysical Reviews*, **2018**, 10, 27-48	3.7	71
107	Biophysical properties of human □cardiac myosin with converter mutations that cause hypertrophic cardiomyopathy. *Science Advances*, **2017**, 3, e1601959	14.3	41
106	The myosin mesa and the basis of hypercontractility caused by hypertrophic cardiomyopathy mutations. *Nature Structural and Molecular Biology*, **2017**, 24, 525-533	17.6	101
105	Multidimensional structure-function relationships in human □cardiac myosin from population-scale genetic variation. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 6701-6	11.5	68

104	Effects of hypertrophic and dilated cardiomyopathy mutations on power output by human βcardiac myosin. *Journal of Experimental Biology*, **2016**, 219, 161-7	3	44
103	A small-molecule inhibitor of sarcomere contractility suppresses hypertrophic cardiomyopathy in mice. *Science*, **2016**, 351, 617-21	33.3	282
102	Early-Onset Hypertrophic Cardiomyopathy Mutations Significantly Increase the Velocity, Force, and Actin-Activated ATPase Activity of Human βCardiac Myosin. *Cell Reports*, **2016**, 17, 2857-2864	10.6	45
101	Mechanistic heterogeneity in contractile properties of βtropomyosin (TPM1) mutants associated with inherited cardiomyopathies. *Journal of Biological Chemistry*, **2015**, 290, 7003-15	5.4	33
100	Optimized measurements of separations and angles between intra-molecular fluorescent markers. *Nature Communications*, **2015**, 6, 8621	17.4	26
99	Contractility parameters of human βcardiac myosin with the hypertrophic cardiomyopathy mutation R403Q show loss of motor function. *Science Advances*, **2015**, 1, e1500511	14.3	68
98	Establishing disease causality for a novel gene variant in familial dilated cardiomyopathy using a functional in-vitro assay of regulated thin filaments and human cardiac myosin. *BMC Medical Genetics*, **2015**, 16, 97	2.1	3
97	Harmonic force spectroscopy measures load-dependent kinetics of individual human βcardiac myosin molecules. *Nature Communications*, **2015**, 6, 7931	17.4	43
96	Ensemble force changes that result from human cardiac myosin mutations and a small-molecule effector. *Cell Reports*, **2015**, 11, 910-920	10.6	71
95	The myosin mesa and a possible unifying hypothesis for the molecular basis of human hypertrophic cardiomyopathy. *Biochemical Society Transactions*, **2015**, 43, 64-72	5.1	82
94	A mitochondria-anchored isoform of the actin-nucleating spire protein regulates mitochondrial division. *ELife*, **2015**, 4,	8.9	171
93	Author response: A mitochondria-anchored isoform of the actin-nucleating spire protein regulates mitochondrial division **2015**,		4
92	Hypertrophic and dilated cardiomyopathy: four decades of basic research on muscle lead to potential therapeutic approaches to these devastating genetic diseases. *Biophysical Journal*, **2014**, 106, 1236-49	2.9	178
91	Observation of correlated X-ray scattering at atomic resolution. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2014**, 369, 20130315	5.8	31
90	Molecular consequences of the R453C hypertrophic cardiomyopathy mutation on human βcardiac myosin motor function. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 12607-12	11.5	110
89	Memories of Hugh E. Huxley (1924-2013). *Molecular Biology of the Cell*, **2013**, 24, 2769-71	3.5	1
88	Effects of troponin T cardiomyopathy mutations on the calcium sensitivity of the regulated thin filament and the actomyosin cross-bridge kinetics of human βcardiac myosin. *PLoS ONE*, **2013**, 8, e83403	3.7	41
87	Cell-intrinsic functional effects of the βcardiac myosin Arg-403-Gln mutation in familial hypertrophic cardiomyopathy. *Biophysical Journal*, **2012**, 102, 2782-90	2.9	16

86	One path to understanding energy transduction in biological systems. *Nature Medicine*, **2012**, 18, 1478-82	30.5	9
85	Structural and functional insights on the Myosin superfamily. *Bioinformatics and Biology Insights*, **2012**, 6, 11-21	5.3	29
84	The myosin superfamily at a glance. *Journal of Cell Science*, **2012**, 125, 1627-32	5.3	167
83	Detailed tuning of structure and intramolecular communication are dispensable for processive motion of myosin VI. *Biophysical Journal*, **2011**, 100, 430-9	2.9	32
82	Principles of unconventional myosin function and targeting. *Annual Review of Cell and Developmental Biology*, **2011**, 27, 133-55	12.6	118
81	Molecular motors: forty years of interdisciplinary research. *Molecular Biology of the Cell*, **2011**, 22, 3936-9	3.5	10
80	Biochemistry. Molecular motors, beauty in complexity. *Science*, **2011**, 331, 1143-4	33.3	22
79	Proteomics approach to study the functions of Drosophila myosin VI through identification of multiple cargo-binding proteins. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 5566-71	11.5	25
78	Myosin VI: an innovative motor that challenged the swinging lever arm hypothesis. *Nature Reviews Molecular Cell Biology*, **2010**, 11, 128-37	48.7	76
77	Functional diversity among a family of human skeletal muscle myosin motors. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 1053-8	11.5	74
76	Single-molecule dual-beam optical trap analysis of protein structure and function. *Methods in Enzymology*, **2010**, 475, 321-75	1.7	28
75	Helicity of short E-R/K peptides. *Protein Science*, **2010**, 19, 2001-5	6.3	24
74	Coupled myosin VI motors facilitate unidirectional movement on an F-actin network. *Journal of Cell Biology*, **2009**, 187, 53-60	7.3	49
73	Insights into human beta-cardiac myosin function from single molecule and single cell studies. *Journal of Cardiovascular Translational Research*, **2009**, 2, 426-40	3.3	22
72	Engineered myosin VI motors reveal minimal structural determinants of directionality and processivity. *Journal of Molecular Biology*, **2009**, 392, 862-7	6.5	26
71	Molecular motors: a surprising twist in myosin VI translocation. *Current Biology*, **2008**, 18, R68-70	6.3	2
70	Dynamic organization of gene loci and transcription compartments in the cell nucleus. *Biophysical Journal*, **2008**, 95, 5003-4	2.9	
69	Long single alpha-helical tail domains bridge the gap between structure and function of myosin VI. *Nature Structural and Molecular Biology*, **2008**, 15, 591-7	17.6	98

68	Dynamic charge interactions create surprising rigidity in the ER/K alpha-helical protein motif. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 13356-61	11.5	77
67	Dynamics of the unbound head during myosin V processive translocation. *Nature Structural and Molecular Biology*, **2007**, 14, 246-8	17.6	152
66	The power stroke of myosin VI and the basis of reverse directionality. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 772-7	11.5	84
65	Precise positioning of myosin VI on endocytic vesicles in vivo. *PLoS Biology*, **2007**, 5, e210	9.7	44
64	Molecular motors take tension in stride. *Cell*, **2006**, 126, 242-4	56.2	30
63	Rho kinase\'s role in myosin recruitment to the equatorial cortex of mitotic Drosophila S2 cells is for myosin regulatory light chain phosphorylation. *PLoS ONE*, **2006**, 1, e131	3.7	56
62	A flexible domain is essential for the large step size and processivity of myosin VI. *Molecular Cell*, **2005**, 17, 603-9	17.6	86
61	Single molecule high-resolution colocalization of Cy3 and Cy5 attached to macromolecules measures intramolecular distances through time. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 1419-23	11.5	272
60	A force-dependent state controls the coordination of processive myosin V. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 13873-8	11.5	155
59	Two important polymers cross paths. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 15825-6	11.5	3
58	Dictyostelium myosin bipolar thick filament formation: importance of charge and specific domains of the myosin rod. *PLoS Biology*, **2004**, 2, e356	9.7	22
57	Myosin VI walks hand-over-hand along actin. *Nature Structural and Molecular Biology*, **2004**, 11, 884-7	17.6	116
56	The mechanism of myosin VI translocation and its load-induced anchoring. *Cell*, **2004**, 116, 737-49	56.2	214
55	Building and using optical traps to study properties of molecular motors. *Methods in Enzymology*, **2003**, 361, 112-33	1.7	26
54	Structure of an F-actin trimer disrupted by gelsolin and implications for the mechanism of severing. *Journal of Biological Chemistry*, **2003**, 278, 1229-38	5.4	31
53	Role of the lever arm in the processive stepping of myosin V. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 14159-64	11.5	145
52	A myosin II mutation uncouples ATPase activity from motility and shortens step size. *Nature Cell Biology*, **2001**, 3, 311-5	23.4	70
51	The myosin swinging cross-bridge model. *Nature Reviews Molecular Cell Biology*, **2001**, 2, 387-92	48.7	217

50	Variable surface loops and myosin activity: accessories to a motor. *Journal of Muscle Research and Cell Motility*, **2000**, 21, 139-51	3.5	44
49	Dynacortin, a genetic link between equatorial contractility and global shape control discovered by library complementation of a Dictyostelium discoideum cytokinesis mutant. *Journal of Cell Biology*, **2000**, 150, 823-38	7.3	88
48	A FRET-based sensor reveals large ATP hydrolysis-induced conformational changes and three distinct states of the molecular motor myosin. *Cell*, **2000**, 102, 683-94	56.2	132
47	Mutational analysis of phosphorylation sites in the Dictyostelium myosin II tail: disruption of myosin function by a single charge change. *FEBS Letters*, **2000**, 466, 267-72	3.8	14
46	A structural model for phosphorylation control of Dictyostelium myosin II thick filament assembly. *Journal of Cell Biology*, **1999**, 147, 1039-48	7.3	37
45	Myosin-V is a processive actin-based motor. *Nature*, **1999**, 400, 590-3	50.4	695
44	The sequence of the myosin 50-20K loop affects MyosinVs affinity for actin throughout the actin-myosin ATPase cycle and its maximum ATPase activity. *Biochemistry*, **1999**, 38, 3785-92	3.2	78
43	Single molecule biochemistry using optical tweezers. *FEBS Letters*, **1998**, 430, 23-7	3.8	16
42	Cold-sensitive mutants G680V and G691C of Dictyostelium myosin II confer dramatically different biochemical defects. *Journal of Biological Chemistry*, **1997**, 272, 27612-7	5.4	46
41	On the role of myosin-II in cytokinesis: division of Dictyostelium cells under adhesive and nonadhesive conditions. *Molecular Biology of the Cell*, **1997**, 8, 2617-29	3.5	127
40	Myosin heavy chain phosphorylation sites regulate myosin localization during cytokinesis in live cells. *Molecular Biology of the Cell*, **1997**, 8, 2605-15	3.5	78
39	Phenotypically selected mutations in myosinVs actin binding domain demonstrate intermolecular contacts important for motor function. *Biochemistry*, **1997**, 36, 8465-73	3.2	35
38	Studies on the Dynamic Localization of GFP-Myosin During Cytokinesis in Live Cells. *Microscopy and Microanalysis*, **1997**, 3, 129-130	0.5	
37	Structure-function analysis of the motor domain of myosin. *Annual Review of Cell and Developmental Biology*, **1996**, 12, 543-73	12.6	77
36	Cold-sensitive mutations of Dictyostelium myosin heavy chain highlight functional domains of the myosin motor. *Genetics*, **1996**, 143, 801-10	4	33
35	Identification and molecular characterization of a yeast myosin I. *Cytoskeleton*, **1995**, 30, 73-84		67
34	Functional analysis of a cardiac myosin rod in Dictyostelium discoideum. *Cytoskeleton*, **1994**, 27, 313-26		8
33	Single myosin molecule mechanics: piconewton forces and nanometre steps. *Nature*, **1994**, 368, 113-9	50.4	1589

32	Enzymatic activities correlate with chimaeric substitutions at the actin-binding face of myosin. *Nature*, **1994**, 368, 567-9	50.4	198
31	How molecular motors work. *Nature*, **1994**, 372, 515-8	50.4	415
30	Dictyostelium myosin heavy chain phosphorylation sites regulate myosin filament assembly and localization in vivo. *Cell*, **1993**, 75, 363-71	56.2	250
29	Three-dimensional atomic model of F-actin decorated with Dictyostelium myosin S1. *Nature*, **1993**, 364, 171-4	50.4	292
28	Quantized velocities at low myosin densities in an in vitro motility assay. *Nature*, **1991**, 352, 307-11	50.4	169
27	An approach to reconstituting motility of single myosin molecules. *Journal of Cell Science*, **1991**, 14, 129-33	5.3	14
26	Assays for actin sliding movement over myosin-coated surfaces. *Methods in Enzymology*, **1991**, 196, 399-416	1.7	333
25	Myosin step size. Estimation from slow sliding movement of actin over low densities of heavy meromyosin. *Journal of Molecular Biology*, **1990**, 214, 699-710	6.5	395
24	Bidirectional movement of actin filaments along tracks of myosin heads. *Nature*, **1989**, 341, 154-6	50.4	72
23	Capping of surface receptors and concomitant cortical tension are generated by conventional myosin. *Nature*, **1989**, 341, 549-51	50.4	255
22	Movement of myosin fragments in vitro: domains involved in force production. *Cell*, **1987**, 48, 953-63	56.2	80
21	Myosin subfragment-1 is sufficient to move actin filaments in vitro. *Nature*, **1987**, 328, 536-9	50.4	456
20	Movement of myosin-coated beads on oriented filaments reconstituted from purified actin. *Nature*, **1985**, 315, 584-6	50.4	119
19	Movement of myosin-coated structures on actin cables. *Cell Motility*, **1983**, 3, 485-9		32
18	Movement of myosin-coated fluorescent beads on actin cables in vitro. *Nature*, **1983**, 303, 31-5	50.4	441
17	Structural states of dictyostelium myosin. *Journal of Supramolecular Structure*, **1979**, 12, 1-14		18
16	Cytoskeletal elements of chick embryo fibroblasts revealed by detergent extraction. *Journal of Supramolecular Structure*, **1976**, 5, 119-30		353
15	Biochemical and structural studies of actomyosin-like proteins from non-muscle cells. Isolation and characterization of myosin from amoebae of Dictyostelium discoideum. *Journal of Molecular Biology*, **1974**, 86, 209-22	6.5	192

14	The contractile proteins of Dictyostelium discoideum. *Journal of Supramolecular Structure*, **1974**, 2, 150-62		15
13	On the molecular basis of action of cytochalasin B. *Journal of Supramolecular Structure*, **1974**, 2, 728-36		35
12	Biochemical and Structural Studies of Actomyosin-like Proteins from Non-Muscle Cells. *Journal of Biological Chemistry*, **1974**, 249, 6013-6020	5.4	94
11	Regulation of skeletal muscle contraction. II. Structural studies of the interaction of the tropomyosin-troponin complex with actin. *Journal of Molecular Biology*, **1972**, 72, 619-32	6.5	172
10	Symposium on bacterial spores: 3. Biochemical studies of spore core and coat protein synthesis. *Journal of Applied Bacteriology*, **1970**, 33, 25-33		9
9	Biochemical studies of bacterial sporulation and germination. 13. Adenylate kinase of vegetative cells and spores of Bacillus subtilis. *Journal of Bacteriology*, **1969**, 98, 69-74	3.5	8
8	Quantitative Measurements of Myosin Movement In Vitro: The Reductionist Approach Carried to Single Molecules271-286		
7	Hypertrophic cardiomyopathy □cardiac myosin mutation (P710R) leads to hypercontractility by disrupting super-relaxed state		1
6	Beyond the myosin mesa: a potential unifying hypothesis on the underlying molecular basis of hyper-contractility caused by a majority of hypertrophic cardiomyopathy mutations		4
5	Controlling load-dependent contractility of the heart at the single molecule level		4
4	Mavacamten stabilizes a folded-back sequestered super-relaxed state of □cardiac myosin		6
3	Hypertrophic cardiomyopathy mutations at the folded-back sequestered □cardiac myosin S1-S2 and S1-S1 interfaces release sequestered heads and increase myosin enzymatic activity		4
2	The molecular basis of hypercontractility caused by the hypertrophic cardiomyopathy mutations R403Q and R663H		1
1	Mutations in the catalytic domain of human □cardiac myosin that cause early onset hypertrophic cardiomyopathy significantly increase the fundamental parameters that determine ensemble force and velocity		1