Andrew D Mcculloch

List of Publications by Year in Descending Order

179 papers	8,506 citations	50 h-index	88 g-index
188 ext. papers	9,709 ext. citations	5.8 avg, IF	5.9 L-index

#	Paper	IF	Citations
179	Biomechanical signals regulating the structure of the heart. *Current Opinion in Physiology*, **2022**, 25, 100482	2.6	0
178	Right Ventricular Flow Vorticity Relationships With Biventricular Shape in Adult Tetralogy of Fallot.. *Frontiers in Cardiovascular Medicine*, **2021**, 8, 806107	5.4	0
177	Isolation and reconstruction of cardiac mitochondria from SBEM images using a deep learning-based method. *Journal of Structural Biology*, **2021**, 214, 107806	3.4	1
176	Atlas-based methods for efficient characterization of patient-specific ventricular activation patterns. *Europace*, **2021**, 23, i88-i95	3.9	1
175	Cardiac cell type-specific gene regulatory programs and disease risk association. *Science Advances*, **2021**, 7,	14.3	8
174	Computational analysis of cardiac structure and function in congenital heart disease: Translating discoveries to clinical strategies. *Journal of Computational Science*, **2021**, 52,	3.4	1
173	Computational ECG mapping and respiratory gating to optimize stereotactic ablative radiotherapy workflow for refractory ventricular tachycardia. *Heart Rhythm O2*, **2021**, 2, 511-520	1.5	2
172	Three-dimensional transistor arrays for intra- and inter-cellular recording.. *Nature Nanotechnology*, **2021**,	28.7	8
171	Cardiomyocyte Expression of ZO-1 Is Essential for Normal Atrioventricular Conduction but Does Not Alter Ventricular Function. *Circulation Research*, **2020**, 127, 284-297	15.7	2
170	Improved compressed sensing and super-resolution of cardiac diffusion MRI with structure-guided total variation. *Magnetic Resonance in Medicine*, **2020**, 84, 1868-1880	4.4	5
169	Research Priorities for Heart Failure With Preserved Ejection Fraction: National Heart, Lung, and Blood Institute Working Group Summary. *Circulation*, **2020**, 141, 1001-1026	16.7	95
168	Direct 3D bioprinting of cardiac micro-tissues mimicking native myocardium. *Biomaterials*, **2020**, 256, 120204	15.6	32
167	Quantification of model and data uncertainty in a network analysis of cardiac myocyte mechanosignalling. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2020**, 378, 20190336	3	7
166	Syndecan-4 Protects the Heart From the Profibrotic Effects of Thrombin-Cleaved Osteopontin. *Journal of the American Heart Association*, **2020**, 9, e013518	6	12
165	Modulating the tension-time integral of the cardiac twitch prevents dilated cardiomyopathy in murine hearts. *JCI Insight*, **2020**, 5,	9.9	5
164	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction. *PLoS ONE*, **2020**, 15, e0241390	3.7	7
163	Predictions of hypertrophy and its regression in response to pressure overload. *Biomechanics and Modeling in Mechanobiology*, **2020**, 19, 1079-1089	3.8	4

162	Predicting the effects of dATP on cardiac contraction using multiscale modeling of the sarcomere. *Archives of Biochemistry and Biophysics*, **2020**, 695, 108582	4.1	1
161	Prolonged Exposure to Microgravity Reduces Cardiac Contractility and Initiates Remodeling in Drosophila. *Cell Reports*, **2020**, 33, 108445	10.6	9
160	Atlas-based measures of left ventricular shape may improve characterization of adverse remodeling in anthracycline-exposed childhood cancer survivors: a cross-sectional imaging study. *Cardio-Oncology*, **2020**, 6, 13	2.8	
159	Histamine-induced biphasic activation of RhoA allows for persistent RhoA signaling. *PLoS Biology*, **2020**, 18, e3000866	9.7	1
158	Methods and sensors for functional genomic studies of cell-cycle transitions in single cells. *Physiological Genomics*, **2020**, 52, 468-477	3.6	2
157	Mechano-Electric Coupling and Arrhythmogenic Current Generation in a Computational Model of Coupled Myocytes. *Frontiers in Physiology*, **2020**, 11, 519951	4.6	
156	Regional variations in ex-vivo diffusion tensor anisotropy are associated with cardiomyocyte remodeling in rats after left ventricular pressure overload. *Journal of Cardiovascular Magnetic Resonance*, **2020**, 22, 21	6.9	2
155	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction **2020**, 15, e0241390		
154	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction **2020**, 15, e0241390		
153	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction **2020**, 15, e0241390		
152	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction **2020**, 15, e0241390		
151	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction **2020**, 15, e0241390		
150	Maintaining resting cardiac fibroblasts in vitro by disrupting mechanotransduction **2020**, 15, e0241390		
149	Optimization Framework for Patient-Specific Cardiac Modeling. *Cardiovascular Engineering and Technology*, **2019**, 10, 553-567	2.2	5
148	Mechanical regulation of gene expression in cardiac myocytes and fibroblasts. *Nature Reviews Cardiology*, **2019**, 16, 361-378	14.8	80
147	Cardiac myosin activation with 2-deoxy-ATP via increased electrostatic interactions with actin. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 11502-11507	11.5	10
146	Properties of cardiac conduction in a cell-based computational model. *PLoS Computational Biology*, **2019**, 15, e1007042	5	26
145	Array atomic force microscopy for real-time multiparametric analysis. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 5872-5877	11.5	8

144	A demonstration of modularity, reuse, reproducibility, portability and scalability for modeling and simulation of cardiac electrophysiology using Kepler Workflows. *PLoS Computational Biology*, **2019**, 15, e1006856	5	3
143	A Stochastic Multiscale Model of Cardiac Thin Filament Activation Using Brownian-Langevin Dynamics. *Biophysical Journal*, **2019**, 117, 2255-2272	2.9	6
142	Multiscale Models of Cardiac Muscle Biophysics and Tissue Remodeling in Hypertrophic Cardiomyopathies. *Current Opinion in Biomedical Engineering*, **2019**, 11, 35-44	4.4	2
141	3D printed micro-scale force gauge arrays to improve human cardiac tissue maturation and enable high throughput drug testing. *Acta Biomaterialia*, **2019**, 95, 319-327	10.8	29
140	Long QT syndrome caveolin-3 mutations differentially modulate K 4 and Ca 1.2 channels to contribute to action potential prolongation. *Journal of Physiology*, **2019**, 597, 1531-1551	3.9	11
139	Perspectives on Sharing Models and Related Resources in Computational Biomechanics Research. *Journal of Biomechanical Engineering*, **2018**, 140,	2.1	8
138	Atlas-Based Computational Analysis of Heart Shape and Function in Congenital Heart Disease. *Journal of Cardiovascular Translational Research*, **2018**, 11, 123-132	3.3	14
137	Tissue-Specific Optical Mapping Models of Swine Atria Informed by Optical Coherence Tomography. *Biophysical Journal*, **2018**, 114, 1477-1489	2.9	10
136	Efficient Computational Modeling of Human Ventricular Activation and Its Electrocardiographic Representation: A Sensitivity Study. *Cardiovascular Engineering and Technology*, **2018**, 9, 447-467	2.2	5
135	Decreasing Compensatory Ability of Concentric Ventricular Hypertrophy in Aortic-Banded Rat Hearts. *Frontiers in Physiology*, **2018**, 9, 37	4.6	2
134	Combining Stiffness and Stretch to Study Cardiac Fibroblast Pro-Fibrotic Activity. *FASEB Journal*, **2018**, 32, 896.2	0.9	
133	Turning the Azimuthal Motions of Adjacent Tropomyosins into a Coupled N-body Problem in a Brownian Model of Cardiac Thin Filament Activation. *Biophysical Journal*, **2018**, 114, 502a-503a	2.9	3
132	Mechanical regulation of cardiac fibroblast profibrotic phenotypes. *Molecular Biology of the Cell*, **2017**, 28, 1871-1882	3.5	110
131	Transcriptomic analysis identifies a role of PI3K-Akt signalling in the responses of skeletal muscle to acute hypoxia in vivo. *Journal of Physiology*, **2017**, 595, 5797-5813	3.9	5
130	Rotors exhibit greater surface ECG variation during ventricular fibrillation than focal sources due to wavebreak, secondary rotors, and meander. *Journal of Cardiovascular Electrophysiology*, **2017**, 28, 1158-1166	2.7	6
129	Evaluation of non-Gaussian diffusion in cardiac MRI. *Magnetic Resonance in Medicine*, **2017**, 78, 1174-1186	4.4	11
128	Insights and Challenges of Multi-Scale Modeling of Sarcomere Mechanics in cTn and Tm DCM Mutants-Genotype to Cellular Phenotype. *Frontiers in Physiology*, **2017**, 8, 151	4.6	6
127	The Soft- and Hard-Heartedness of Cardiac Fibroblasts: Mechanotransduction Signaling Pathways in Fibrosis of the Heart. *Journal of Clinical Medicine*, **2017**, 6,	5.1	89

126	Model of Human Fetal Growth in Hypoplastic Left Heart Syndrome: Reduced Ventricular Growth Due to Decreased Ventricular Filling and Altered Shape. *Frontiers in Pediatrics*, **2017**, 5, 25	3.4	7
125	Predictive model identifies key network regulators of cardiomyocyte mechano-signaling. *PLoS Computational Biology*, **2017**, 13, e1005854	5	30
124	Non-invasive, model-based measures of ventricular electrical dyssynchrony for predicting CRT outcomes. *Europace*, **2016**, 18, iv104-iv112	3.9	14
123	Atrial-selective targeting of arrhythmogenic phase-3 early afterdepolarizations in human myocytes. *Journal of Molecular and Cellular Cardiology*, **2016**, 96, 63-71	5.8	27
122	A Microstructurally Based Multi-Scale Constitutive Model of Active Myocardial Mechanics **2016**, 439-460		5
121	Systems Biophysics: Multiscale Biophysical Modeling of Organ Systems. *Biophysical Journal*, **2016**, 110, 1023-7	2.9	11
120	Biomechanics Simulations Using Cubic Hermite Meshes with Extraordinary Nodes for Isogeometric Cardiac Modeling. *Computer Aided Geometric Design*, **2016**, 43, 27-38	1.2	9
119	A Protocol to Collect Specific Mouse Skeletal Muscles for Metabolomics Studies. *Methods in Molecular Biology*, **2016**, 1375, 169-79	1.4	2
118	A Computational Modeling and Simulation Approach to Investigate Mechanisms of Subcellular cAMP Compartmentation. *PLoS Computational Biology*, **2016**, 12, e1005005	5	33
117	Bitopic Sphingosine 1-Phosphate Receptor 3 (S1P3) Antagonist Rescue from Complete Heart Block: Pharmacological and Genetic Evidence for Direct S1P3 Regulation of Mouse Cardiac Conduction. *Molecular Pharmacology*, **2016**, 89, 176-86	4.3	27
116	Transmural gradients of myocardial structure and mechanics: Implications for fiber stress and strain in pressure overload. *Progress in Biophysics and Molecular Biology*, **2016**, 122, 215-226	4.7	16
115	Electrophysiology and metabolism of caveolin-3-overexpressing mice. *Basic Research in Cardiology*, **2016**, 111, 28	11.8	12
114	Computing rates of Markov models of voltage-gated ion channels by inverting partial differential equations governing the probability density functions of the conducting and non-conducting states. *Mathematical Biosciences*, **2016**, 277, 126-35	3.9	9
113	Effects of Cardiac Troponin I Mutation P83S on Contractile Properties and the Modulation by PKA-Mediated Phosphorylation. *Journal of Physical Chemistry B*, **2016**, 120, 8238-53	3.4	12
112	Desmosomal junctions are necessary for adult sinus node function. *Cardiovascular Research*, **2016**, 111, 274-86	9.9	22
111	Molecular Effects of cTnC DCM Mutations on Calcium Sensitivity and Myofilament Activation-An Integrated Multiscale Modeling Study. *Journal of Physical Chemistry B*, **2016**, 120, 8264-75	3.4	12
110	Multi-scale Modeling of the Cardiovascular System: Disease Development, Progression, and Clinical Intervention. *Annals of Biomedical Engineering*, **2016**, 44, 2642-60	4.7	36
109	Atlas-Based Ventricular Shape Analysis for Understanding Congenital Heart Disease. *Progress in Pediatric Cardiology*, **2016**, 43, 61-69	0.4	14

108	Endothelin receptor B, a candidate gene from human studies at high altitude, improves cardiac tolerance to hypoxia in genetically engineered heterozygote mice. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 10425-30	11.5	35
107	Increased cell membrane capacitance is the dominant mechanism of stretch-dependent conduction slowing in the rabbit heart: a computational study. *Cellular and Molecular Bioengineering*, **2015**, 8, 237-246	3.9	9
106	Intramyocardial injection of hydrogel with high interstitial spread does not impact action potential propagation. *Acta Biomaterialia*, **2015**, 26, 13-22	10.8	22
105	Troponin I Mutations R146G and R21C Alter Cardiac Troponin Function, Contractile Properties, and Modulation by Protein Kinase A (PKA)-mediated Phosphorylation. *Journal of Biological Chemistry*, **2015**, 290, 27749-66	5.4	25
104	High-order finite element methods for cardiac monodomain simulations. *Frontiers in Physiology*, **2015**, 6, 217	4.6	14
103	Bridging scales through multiscale modeling: a case study on protein kinase A. *Frontiers in Physiology*, **2015**, 6, 250	4.6	16
102	HIF1 Represses Cell Stress Pathways to Allow Proliferation of Hypoxic Fetal Cardiomyocytes. *Developmental Cell*, **2015**, 33, 507-21	10.2	82
101	Left Ventricular Diastolic and Systolic Material Property Estimation from Image Data: LV Mechanics Challenge. *Lecture Notes in Computer Science*, **2015**, 8896, 63-73	0.9	3
100	Computational modeling of subcellular transport and signaling. *Current Opinion in Structural Biology*, **2014**, 25, 92-7	8.1	13
99	Connexin defects underlie arrhythmogenic right ventricular cardiomyopathy in a novel mouse model. *Human Molecular Genetics*, **2014**, 23, 1134-50	5.6	64
98	Timing and magnitude of systolic stretch affect myofilament activation and mechanical work. *American Journal of Physiology - Heart and Circulatory Physiology*, **2014**, 307, H353-60	5.2	9
97	Patient-specific modeling of ventricular activation pattern using surface ECG-derived vectorcardiogram in bundle branch block. *Progress in Biophysics and Molecular Biology*, **2014**, 115, 305-13	4.7	20
96	Caveolae in ventricular myocytes are required for stretch-dependent conduction slowing. *Journal of Molecular and Cellular Cardiology*, **2014**, 76, 265-74	5.8	26
95	Computational studies of the effect of the S23D/S24D troponin I mutation on cardiac troponin structural dynamics. *Biophysical Journal*, **2014**, 107, 1675-85	2.9	35
94	PKA phosphorylation of cardiac troponin I modulates activation and relaxation kinetics of ventricular myofibrils. *Biophysical Journal*, **2014**, 107, 1196-1204	2.9	35
93	Using Kepler for Tool Integration in Microarray Analysis Workflows. *Procedia Computer Science*, **2014**, 29, 2162-2167	1.6	2
92	Calcium and IP3 dynamics in cardiac myocytes: experimental and computational perspectives and approaches. *Frontiers in Pharmacology*, **2014**, 5, 35	5.6	42
91	Structural contributions to fibrillatory rotors in a patient-derived computational model of the atria. *Europace*, **2014**, 16 Suppl 4, iv3-iv10	3.9	48

90	Targeted ablation of nesprin 1 and nesprin 2 from murine myocardium results in cardiomyopathy, altered nuclear morphology and inhibition of the biomechanical gene response. *PLoS Genetics*, **2014**, 10, e1004114	6	90
89	Biomechanics of cardiac electromechanical coupling and mechanoelectric feedback. *Journal of Biomechanical Engineering*, **2014**, 136, 021007	2.1	63
88	Toward a hierarchy of mechanisms in CaMKII-mediated arrhythmia. *Frontiers in Pharmacology*, **2014**, 5, 110	5.6	12
87	Using Markov state models to develop a mechanistic understanding of protein kinase A regulatory subunit RIIβ activation in response to cAMP binding. *Journal of Biological Chemistry*, **2014**, 289, 30040-51	5.4	27
86	Nonequilibrium reactivation of Na+ current drives early afterdepolarizations in mouse ventricle. *Circulation: Arrhythmia and Electrophysiology*, **2014**, 7, 1205-13	6.4	35
85	Novel role for vinculin in ventricular myocyte mechanics and dysfunction. *Biophysical Journal*, **2013**, 104, 1623-33	2.9	26
84	Patient-Specific Models of Cardiac Biomechanics. *Journal of Computational Physics*, **2013**, 244, 4-21	4.1	133
83	A three-dimensional finite element model of human atrial anatomy: new methods for cubic Hermite meshes with extraordinary vertices. *Medical Image Analysis*, **2013**, 17, 525-37	15.4	31
82	Myofiber prestretch magnitude determines regional systolic function during ectopic activation in the tachycardia-induced failing canine heart. *American Journal of Physiology - Heart and Circulatory Physiology*, **2013**, 305, H192-202	5.2	6
81	Multi-core CPU or GPU-accelerated Multiscale Modeling for Biomolecular Complexes. *Computational and Mathematical Biophysics*, **2013**, 1,	1.7	14
80	A single strain-based growth law predicts concentric and eccentric cardiac growth during pressure and volume overload. *Mechanics Research Communications*, **2012**, 42, 40-50	2.2	86
79	A novel mechanism involving four-and-a-half LIM domain protein-1 and extracellular signal-regulated kinase-2 regulates titin phosphorylation and mechanics. *Journal of Biological Chemistry*, **2012**, 287, 29273-84	5.4	74
78	Mechanical discoordination increases continuously after the onset of left bundle branch block despite constant electrical dyssynchrony in a computational model of cardiac electromechanics and growth. *Europace*, **2012**, 14 Suppl 5, v65-v72	3.9	30
77	Mouse and computational models link Mlc2v dephosphorylation to altered myosin kinetics in early cardiac disease. *Journal of Clinical Investigation*, **2012**, 122, 1209-21	15.9	100
76	Incorporating Human Ventricular Fiber Architecture in Patient-Specific Computational Models. *FASEB Journal*, **2012**, 26, 864.19	0.9	
75	Cardiomyocyte Geometry and Stretch Effects on Longitudinal Conduction Velocity. *FASEB Journal*, **2012**, 26, 1053.8	0.9	
74	Patient-specific modeling of dyssynchronous heart failure: a case study. *Progress in Biophysics and Molecular Biology*, **2011**, 107, 147-55	4.7	104
73	Multi-scale computational models of familial hypertrophic cardiomyopathy: genotype to phenotype. *Journal of the Royal Society Interface*, **2011**, 8, 1550-61	4.1	26

72	Ventricular dilation and electrical dyssynchrony synergistically increase regional mechanical nonuniformity but not mechanical dyssynchrony: a computational model. *Circulation: Heart Failure*, **2010**, 3, 528-36	7.6	46
71	Coupling of adjacent tropomyosins enhances cross-bridge-mediated cooperative activation in a markov model of the cardiac thin filament. *Biophysical Journal*, **2010**, 98, 2254-64	2.9	70
70	Determination of three-dimensional ventricular strain distributions in gene-targeted mice using tagged MRI. *Magnetic Resonance in Medicine*, **2010**, 64, 1281-8	4.4	27
69	Systems approaches and algorithms for discovery of combinatorial therapies. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2010**, 2, 181-193	6.6	70
68	Mechanostransduction in Cardiac and Stem-Cell Derived Cardiac Cells **2010**, 99-139		1
67	Myocardial material parameter estimation from in-vivo myocardial strain measurements. *FASEB Journal*, **2010**, 24, 782.8	0.9	
66	A Computational Framework for Patient-Specific Multi-Scale Cardiac Modeling **2010**, 203-223		3
65	Systems biology and multi-scale modeling of the heart **2009**,		2
64	Effect of transmurally heterogeneous myocyte excitation-contraction coupling on canine left ventricular electromechanics. *Experimental Physiology*, **2009**, 94, 541-52	2.4	42
63	Cai et al. reply. *Nature*, **2009**, 458, E9-E10	50.4	21
62	Effects of biventricular pacing and scar size in a computational model of the failing heart with left bundle branch block. *Medical Image Analysis*, **2009**, 13, 362-9	15.4	69
61	ROLE OF STRUCTURAL AND SIGNALING MOLECULES IN CARDIAC MECHANOTRANSDUCTION **2009**, 65-80		
60	Integrating metabolomics and phenomics with systems models of cardiac hypoxia. *Progress in Biophysics and Molecular Biology*, **2008**, 96, 209-25	4.7	14
59	Cell cultures as models of cardiac mechanoelectric feedback. *Progress in Biophysics and Molecular Biology*, **2008**, 97, 367-82	4.7	31
58	The role of mechanoelectric feedback in vulnerability to electric shock. *Progress in Biophysics and Molecular Biology*, **2008**, 97, 461-78	4.7	20
57	Mechanisms of conduction slowing during myocardial stretch by ventricular volume loading in the rabbit. *American Journal of Physiology - Heart and Circulatory Physiology*, **2008**, 295, H1270-H1278	5.2	37
56	Systems approach to understanding electromechanical activity in the human heart: a national heart, lung, and blood institute workshop summary. *Circulation*, **2008**, 118, 1202-11	16.7	56
55	An FHL1-containing complex within the cardiomyocyte sarcomere mediates hypertrophic biomechanical stress responses in mice. *Journal of Clinical Investigation*, **2008**, 118, 3870-80	15.9	184

54	Differences in Ito and myofilament protein expression may underlie transmurally-varying electromechanics in the canine left ventricle. *FASEB Journal*, **2008**, 22, 751.3	0.9	
53	Model-based development of four-dimensional wall motion measures. *Computer Methods in Applied Mechanics and Engineering*, **2007**, 196, 3061-3069	5.7	2
52	Ventricular interaction quantified with a novel multi-scale cardiovascular model. *Proceedings in Applied Mathematics and Mechanics*, **2007**, 7, 1141201-1141201	0.2	
51	Coupling of a 3D finite element model of cardiac ventricular mechanics to lumped systems models of the systemic and pulmonic circulation. *Annals of Biomedical Engineering*, **2007**, 35, 1-18	4.7	193
50	Effect of Pacing Site and Infarct Location on Regional Mechanics and Global Hemodynamics in a Model Based Study of Heart Failure. *Lecture Notes in Computer Science*, **2007**, 350-360	0.9	7
49	Systems analysis of PKA-mediated phosphorylation gradients in live cardiac myocytes. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 12923-8	11.5	123
48	Cardiac systems biology. *Annals of the New York Academy of Sciences*, **2005**, 1047, 283-95	6.5	23
47	A more efficient search strategy for aging genes based on connectivity. *Bioinformatics*, **2005**, 21, 338-48	7.2	89
46	An ionic model of stretch-activated and stretch-modulated currents in rabbit ventricular myocytes. *Europace*, **2005**, 7 Suppl 2, 128-34	3.9	40
45	Functionally and structurally integrated computational modeling of ventricular physiology. *The Japanese Journal of Physiology*, **2004**, 54, 531-9		13
44	Computational Methods for Cardiac Electrophysiology. *Handbook of Numerical Analysis*, **2004**, 12, 129-187	7	9
43	Proarrhythmic consequences of a KCNQ1 AKAP-binding domain mutation: computational models of whole cells and heterogeneous tissue. *Circulation Research*, **2004**, 95, 1216-24	15.7	99
42	Mechanistic systems models of cell signaling networks: a case study of myocyte adrenergic regulation. *Progress in Biophysics and Molecular Biology*, **2004**, 85, 261-78	4.7	59
41	Effects of magnesium on cardiac excitation-contraction coupling. *Journal of the American College of Nutrition*, **2004**, 23, 514S-517S	3.5	12
40	Glycated collagen cross-linking alters cardiac mechanics in volume-overload hypertrophy. *American Journal of Physiology - Heart and Circulatory Physiology*, **2003**, 284, H1277-84	5.2	69
39	Electromechanical model of cardiac resynchronization in the dilated failing heart with left bundle branch block. *Journal of Electrocardiology*, **2003**, 36 Suppl, 57-61	1.4	51
38	Anisotropic stretch-induced hypertrophy in neonatal ventricular myocytes micropatterned on deformable elastomers. *Biotechnology and Bioengineering*, **2003**, 81, 578-87	4.9	161
37	Ventricular filling slows epicardial conduction and increases action potential duration in an optical mapping study of the isolated rabbit heart. *Journal of Cardiovascular Electrophysiology*, **2003**, 14, 739-49	2.7	52

36	Relationship between regional shortening and asynchronous electrical activation in a three-dimensional model of ventricular electromechanics. *Journal of Cardiovascular Electrophysiology*, **2003**, 14, S196-202	2.7	56
35	Modeling beta-adrenergic control of cardiac myocyte contractility in silico. *Journal of Biological Chemistry*, **2003**, 278, 47997-8003	5.4	177
34	Computational Methods for Soft Tissue Biomechanics **2003**, 273-342		16
33	Computational model of three-dimensional cardiac electromechanics. *Computing and Visualization in Science*, **2002**, 4, 249-257	1	108
32	The cardiac mechanical stretch sensor machinery involves a Z disc complex that is defective in a subset of human dilated cardiomyopathy. *Cell*, **2002**, 111, 943-55	56.2	631
31	Integrative biological modelling in silico. *Novartis Foundation Symposium*, **2002**, 247, 4-19; discussion 20-5, 84-90, 244-52		2
30	In vivo finite element model-based image analysis of pacemaker lead mechanics. *Medical Image Analysis*, **2001**, 5, 255-70	15.4	18
29	Mechanoelectric feedback in a model of the passively inflated left ventricle. *Annals of Biomedical Engineering*, **2001**, 29, 414-26	4.7	38
28	Phase shifting prior to spatial filtering enhances optical recordings of cardiac action potential propagation. *Annals of Biomedical Engineering*, **2001**, 29, 854-61	4.7	10
27	Regional myocardial mechanics: integrative computational models of flow-function relations. *Journal of Nuclear Cardiology*, **2001**, 8, 506-19	2.1	17
26	Age-associated cardiac dysfunction in Drosophila melanogaster. *Circulation Research*, **2001**, 88, 1053-8	15.7	104
25	Model study of ATP and ADP buffering, transport of Ca(2+) and Mg(2+), and regulation of ion pumps in ventricular myocyte. *Biophysical Journal*, **2001**, 81, 614-29	2.9	53
24	Flux-balance analysis of mitochondrial energy metabolism: consequences of systemic stoichiometric constraints. *American Journal of Physiology - Regulatory Integrative and Comparative Physiology*, **2001**, 280, R695-704	3.2	121
23	Effect of Laminar Orthotropic Myofiber Architecture on Regional Stress and Strain in the Canine Left Ventricle. *Journal of Elasticity*, **2000**, 61, 143-164	1.5	161
22	Three-dimensional stress and strain in passive rabbit left ventricle: a model study. *Annals of Biomedical Engineering*, **2000**, 28, 781-92	4.7	103
21	Integrative models for understanding the structural basis of regional mechanical dysfunction in ischemic myocardium. *Annals of Biomedical Engineering*, **2000**, 28, 979-90	4.7	19
20	Model-based analysis of optically mapped epicardial activation patterns and conduction velocity. *Annals of Biomedical Engineering*, **2000**, 28, 1085-92	4.7	17
19	Myocardial mechanics and collagen structure in the osteogenesis imperfecta murine (oim). *Circulation Research*, **2000**, 87, 663-9	15.7	106

18	Laminar fiber architecture and three-dimensional systolic mechanics in canine ventricular myocardium. *American Journal of Physiology - Heart and Circulatory Physiology*, **1999**, 276, H595-607	5.2	166
17	Measurement of orientation and distribution of cellular alignment and cytoskeletal organization. *Annals of Biomedical Engineering*, **1999**, 27, 712-20	4.7	83
16	Differential responses of adult cardiac fibroblasts to in vitro biaxial strain patterns. *Journal of Molecular and Cellular Cardiology*, **1999**, 31, 1833-43	5.8	127
15	Regional myocardial perfusion and mechanics: a model-based method of analysis. *Annals of Biomedical Engineering*, **1998**, 26, 743-55	4.7	22
14	Three-dimensional analysis of regional cardiac function: a model of rabbit ventricular anatomy. *Progress in Biophysics and Molecular Biology*, **1998**, 69, 157-83	4.7	216
13	Automated measurement of myofiber disarray in transgenic mice with ventricular expression of ras. *The Anatomical Record*, **1998**, 252, 612-25		126
12	Flow-function relations during graded coronary occlusions in the dog: effects of transmural location and segment orientation. *Cardiovascular Research*, **1998**, 37, 636-45	9.9	20
11	Mechanisms of length history-dependent tension in an ionic model of the cardiac myocyte. *American Journal of Physiology - Heart and Circulatory Physiology*, **1998**, 274, H1032-40	5.2	21
10	Three-dimensional residual strain in midanterior canine left ventricle. *American Journal of Physiology - Heart and Circulatory Physiology*, **1997**, 273, H1968-76	5.2	46
9	Angiotensin II stimulates the autocrine production of transforming growth factor-beta 1 in adult rat cardiac fibroblasts. *Journal of Molecular and Cellular Cardiology*, **1995**, 27, 2347-57	5.8	217
8	Finite element stress analysis of left ventricular mechanics in the beating dog heart. *Journal of Biomechanics*, **1995**, 28, 1167-77	2.9	260
7	Stress-dependent finite growth in soft elastic tissues. *Journal of Biomechanics*, **1994**, 27, 455-67	2.9	1038
6	Nonuniform muscle fiber orientation causes spiral wave drift in a finite element model of cardiac action potential propagation. *Journal of Cardiovascular Electrophysiology*, **1994**, 5, 496-509	2.7	52
5	Measurement of strain and analysis of stress in resting rat left ventricular myocardium. *Journal of Biomechanics*, **1993**, 26, 665-76	2.9	117
4	Nonhomogeneous analysis of epicardial strain distributions during acute myocardial ischemia in the dog. *Journal of Biomechanics*, **1993**, 26, 19-35	2.9	57
3	Non-homogeneous analysis of three-dimensional transmural finite deformation in canine ventricular myocardium. *Journal of Biomechanics*, **1991**, 24, 539-48	2.9	76
2	Factors Affecting the Regional Mechanics of the Diastolic Heart. *Institute for Nonlinear Science*, **1991**, 87-119		5
1	Integrative Biological Modelling In Silico. *Novartis Foundation Symposium*,4-25		6