

Mark B Ratcliffe

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

65
papers

1,832
citations

24
h-index

41
g-index

73
ext. papers

2,026
ext. citations

3
avg, IF

4.07
L-index

#	Paper	IF	Citations
65	MRI-based finite-element analysis of left ventricular aneurysm. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2005 , 289, H692-700	5.2	151
64	Large animal model of left ventricular aneurysm. <i>Annals of Thoracic Surgery</i> , 1989 , 48, 838-45	2.7	148
63	Large animal model of ischemic mitral regurgitation. <i>Annals of Thoracic Surgery</i> , 1994 , 57, 432-9	2.7	141
62	Mechanism underlying mechanical dysfunction in the border zone of left ventricular aneurysm: a finite element model study. <i>Annals of Thoracic Surgery</i> , 2001 , 71, 654-62	2.7	117
61	First finite element model of the left ventricle with mitral valve: insights into ischemic mitral regurgitation. <i>Annals of Thoracic Surgery</i> , 2010 , 89, 1546-53	2.7	96
60	A computationally efficient formal optimization of regional myocardial contractility in a sheep with left ventricular aneurysm. <i>Journal of Biomechanical Engineering</i> , 2009 , 131, 111001	2.1	68
59	Effect of ventricular size and patch stiffness in surgical anterior ventricular restoration: a finite element model study. <i>Annals of Thoracic Surgery</i> , 2005 , 79, 185-93	2.7	58
58	A novel method for quantifying the in-vivo mechanical effect of material injected into a myocardial infarction. <i>Annals of Thoracic Surgery</i> , 2011 , 92, 935-41	2.7	57
57	Magnetic resonance imaging-based finite element stress analysis after linear repair of left ventricular aneurysm. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2008 , 135, 1094-102, 1102.e1-2	1.5	57
56	Fluid-Structure Interactions of the Mitral Valve and Left Heart: Comprehensive Strategies, Past, Present and Future. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2010 , 26, 348-380	2.6	53
55	Regional left ventricular myocardial contractility and stress in a finite element model of posterobasal myocardial infarction. <i>Journal of Biomechanical Engineering</i> , 2011 , 133, 044501	2.1	46
54	The effect of mitral annuloplasty shape in ischemic mitral regurgitation: a finite element simulation. <i>Annals of Thoracic Surgery</i> , 2012 , 93, 776-82	2.7	44
53	Residual stress produced by ventricular volume reduction surgery has little effect on ventricular function and mechanics: a finite element model study. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2001 , 122, 592-9	1.5	41
52	Comparison of the Young-Laplace law and finite element based calculation of ventricular wall stress: implications for postinfarct and surgical ventricular remodeling. <i>Annals of Thoracic Surgery</i> , 2011 , 91, 150-6	2.7	38
51	National Institutes of Health funding for cardiothoracic surgical research. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2008 , 136, 392-7; discussion 398-9	1.5	36
50	Patient-specific finite element modeling of the Cardiokinetix Parachute(®) device: effects on left ventricular wall stress and function. <i>Medical and Biological Engineering and Computing</i> , 2014 , 52, 557-66	3.1	34
49	Akinetic myocardial infarcts must contain contracting myocytes: finite-element model study. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2005 , 288, H1844-50	5.2	34

48	Patient-specific finite element-based analysis of ventricular myofiber stress after Coapsys: importance of residual stress. <i>Annals of Thoracic Surgery</i> , 2012 , 93, 1964-71	2.7	31
47	Repair of left ventricular aneurysm. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 1992 , 104, 752-762	1.5	31
46	Applications of computational modeling in cardiac surgery. <i>Journal of Cardiac Surgery</i> , 2014 , 29, 293-302	1.3	29
45	Electromechanical feedback with reduced cellular connectivity alters electrical activity in an infarct injured left ventricle: a finite element model study. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2012 , 302, H206-14	5.2	28
44	Dor procedure for dyskinetic anteroapical myocardial infarction fails to improve contractility in the border zone. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2010 , 140, 233-9, 239.e1-4	1.5	26
43	Left ventricular myocardial contractility is depressed in the borderzone after posterolateral myocardial infarction. <i>Annals of Thoracic Surgery</i> , 2013 , 95, 1619-25	2.7	25
42	Left ventricular volume and function after endoventricular patch plasty for dyskinetic anteroapical left ventricular aneurysm in sheep. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2005 , 130, 1032-8	1.5	23
41	Right Ventricular Dysfunction Impairs Effort Tolerance Independent of Left Ventricular Function Among Patients Undergoing Exercise Stress Myocardial Perfusion Imaging. <i>Circulation: Cardiovascular Imaging</i> , 2016 , 9,	3.9	22
40	Biventricular finite element modeling of the Acorn CorCap Cardiac Support Device on a failing heart. <i>Annals of Thoracic Surgery</i> , 2013 , 95, 2022-7	2.7	21
39	A coupled biventricular finite element and lumped-parameter circulatory system model of heart failure. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2013 , 16, 807-18	2.1	21
38	Endoventricular patch plasty for dyskinetic anteroapical left ventricular aneurysm increases systolic circumferential shortening in sheep. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2007 , 134, 1017-24	1.5	21
37	A N-terminal truncated intracellular isoform of matrix metalloproteinase-2 impairs contractility of mouse myocardium. <i>Frontiers in Physiology</i> , 2014 , 5, 363	4.6	20
36	Effect of adjustable passive constraint on the failing left ventricle: a finite-element model study. <i>Annals of Thoracic Surgery</i> , 2010 , 89, 132-7	2.7	20
35	A novel method for quantifying in-vivo regional left ventricular myocardial contractility in the border zone of a myocardial infarction. <i>Journal of Biomechanical Engineering</i> , 2011 , 133, 094506	2.1	20
34	Moderate mitral regurgitation accelerates left ventricular remodeling after posterolateral myocardial infarction. <i>Annals of Thoracic Surgery</i> , 2011 , 92, 1614-20	2.7	19
33	Measurement of mitral leaflet and annular geometry and stress after repair of posterior leaflet prolapse: virtual repair using a patient-specific finite element simulation. <i>Annals of Thoracic Surgery</i> , 2014 , 97, 1496-503	2.7	17
32	Finite element modeling of mitral leaflet tissue using a layered shell approximation. <i>Medical and Biological Engineering and Computing</i> , 2012 , 50, 1071-9	3.1	15
31	Myofilament dysfunction contributes to impaired myocardial contraction in the infarct border zone. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2014 , 307, H1150-8	5.2	14

30	Mechanical effects of MitraClip on leaflet stress and myocardial strain in functional mitral regurgitation - A finite element modeling study. <i>PLoS ONE</i> , 2019 , 14, e0223472	3.7	13
29	Adaptive generation of multimaterial grids from imaging data for biomedical Lagrangian fluid-structure simulations. <i>Biomechanics and Modeling in Mechanobiology</i> , 2010 , 9, 187-201	3.8	13
28	Finite Element Modeling of Mitral Valve Repair. <i>Journal of Biomechanical Engineering</i> , 2016 , 138, 021009	2.1	12
27	Short term doxycycline treatment induces sustained improvement in myocardial infarction border zone contractility. <i>PLoS ONE</i> , 2018 , 13, e0192720	3.7	11
26	The benefit of enhanced contractility in the infarct borderzone: a virtual experiment. <i>Frontiers in Physiology</i> , 2012 , 3, 86	4.6	10
25	Neochord placement versus triangular resection in mitral valve repair: A finite element model. <i>Journal of Surgical Research</i> , 2016 , 206, 98-105	2.5	9
24	Moderate Ischemic Mitral Regurgitation After Posterolateral Myocardial Infarction in Sheep Alters Left Ventricular Shear but Not Normal Strain in the Infarct and Infarct Borderzone. <i>Annals of Thoracic Surgery</i> , 2016 , 101, 1691-9	2.7	7
23	Echocardiography-quantified myocardial strain-a marker of global and regional infarct size that stratifies likelihood of left ventricular thrombus. <i>Echocardiography</i> , 2017 , 34, 1623-1632	1.5	7
22	Association of Uneven MitraClip Application and Leaflet Stress in a Finite Element Model. <i>JAMA Surgery</i> , 2017 , 152, 111-114	5.4	7
21	Finite-element based optimization of left ventricular passive stiffness in normal volunteers and patients after myocardial infarction: Utility of an inverse deformation gradient calculation of regional diastolic strain. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021 , 119, 104431	4.1	7
20	Left ventricular geometry predicts optimal response to percutaneous mitral repair via MitraClip: Integrated assessment by two- and three-dimensional echocardiography. <i>Catheterization and Cardiovascular Interventions</i> , 2019 , 93, 1152-1160	2.7	6
19	A Novel MRI-Based Finite Element Modeling Method for Calculation of Myocardial Ischemia Effect in Patients With Functional Mitral Regurgitation. <i>Frontiers in Physiology</i> , 2020 , 11, 158	4.6	5
18	Ischemic Mitral Regurgitation: Abnormal Strain Overestimates Nonviable Myocardium. <i>Annals of Thoracic Surgery</i> , 2018 , 105, 1754-1761	2.7	5
17	Posterior papillary muscle anchoring affects remote myofiber stress and pump function: finite element analysis. <i>Annals of Thoracic Surgery</i> , 2014 , 98, 1355-62	2.7	5
16	Transcatheter MitraClip repair alters mitral annular geometry - device induced annular remodeling on three-dimensional echocardiography predicts therapeutic response. <i>Cardiovascular Ultrasound</i> , 2019 , 17, 31	2.4	5
15	Tissue-based markers of right ventricular dysfunction in ischemic mitral regurgitation assessed via stress cardiac magnetic resonance and three-dimensional echocardiography. <i>International Journal of Cardiovascular Imaging</i> , 2019 , 35, 683-693	2.5	5
14	Undersized Mitral Annuloplasty Increases Strain in the Proximal Lateral Left Ventricular Wall. <i>Annals of Thoracic Surgery</i> , 2017 , 103, 820-827	2.7	4
13	Myocardial injection of a thermoresponsive hydrogel with reactive oxygen species scavenger properties improves border zone contractility. <i>Journal of Biomedical Materials Research - Part A</i> , 2020 , 108, 1736-1746	5.4	4

12	Effect of mitral annuloplasty device shape and size on leaflet and myofiber stress following repair of posterior leaflet prolapse: a patient-specific finite element simulation. <i>Journal of Heart Valve Disease</i> , 2014 , 23, 727-34		3
11	Residual Stress Impairs Pump Function After Surgical Ventricular Remodeling: A Finite Element Analysis. <i>Annals of Thoracic Surgery</i> , 2015 , 100, 2198-205	2.7	2
10	Invited commentary. <i>Annals of Thoracic Surgery</i> , 2007 , 84, 101-2	2.7	2
9	Ischemia-Mediated Dysfunction in Subpapillary Myocardium as a Marker of Functional Mitral Regurgitation. <i>JACC: Cardiovascular Imaging</i> , 2021 , 14, 826-839	8.4	2
8	Left ventricular geometry during unloading and the end-systolic pressure volume relationship: Measurement with a modified real-time MRI-based method in normal sheep. <i>PLoS ONE</i> , 2020 , 15, e0234896	3.7	1
7	Left ventricular pressure gating in ovine cardiac studies: a software-based method. <i>Journal of Biomechanical Engineering</i> , 2013 , 135, 34502	2.1	1
6	Progressive design concepts in off-pump left ventricular remodeling mitral valve repair devices. <i>Annals of Cardiothoracic Surgery</i> , 2015 , 4, 352-4	4.7	1
5	A finite element model of the cardiac ventricles with coupled circulation: Biventricular mesh generation with hexahedral elements, airbags and a functional mockup interface to the circulation. <i>Computers in Biology and Medicine</i> , 2021 , 137, 104840	7	0
4	Invited commentary. <i>Annals of Thoracic Surgery</i> , 2014 , 97, 907-8	2.7	
3	Invited commentary. <i>Annals of Thoracic Surgery</i> , 2013 , 95, 162	2.7	
2	Invited commentary. <i>Annals of Thoracic Surgery</i> , 2014 , 97, 1524-5	2.7	
1	A kinematic model-based analysis framework for 3D Cine-DENSE-validation with an axially compressed gel phantom and application in sheep before and after antero-apical myocardial infarction. <i>Magnetic Resonance in Medicine</i> , 2021 , 86, 2105-2121	4.4	