

Natalia A Trayanova

List of Publications by Year in Descending Order

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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.

288
papers

10,070
citations

59
h-index

86
g-index

316
ext. papers

12,292
ext. citations

5.6
avg, IF

6.58
L-index

#	Paper	IF	Citations
288	Mechanisms of Sinoatrial Node Dysfunction in Heart Failure With Preserved Ejection Fraction.. <i>Circulation</i> , 2022 , 145, 45-60	16.7	3
287	Biological substrate modification suppresses ventricular arrhythmias in a porcine model of chronic ischaemic cardiomyopathy.. <i>European Heart Journal</i> , 2022 ,	9.5	1
286	Anatomically informed deep learning on contrast-enhanced cardiac magnetic resonance imaging for scar segmentation and clinical feature extraction.. <i>Cardiovascular Digital Health Journal</i> , 2022 , 3, 2-13 ²		2
285	The role of mechano-electric feedbacks and hemodynamic coupling in scar-related ventricular tachycardia.. <i>Computers in Biology and Medicine</i> , 2022 , 142, 105203	7	3
284	Arrhythmic sudden death survival prediction using deep learning analysis of scarring in the heart. 2022 , 1, 334-343		3
283	Deep learning a person's risk of sudden cardiac death. <i>Lancet, The</i> , 2022 , 399, 1933	40	
282	Spatial dispersion analysis of LGE-CMR for prediction of ventricular arrhythmias in patients with cardiac sarcoidosis. <i>PACE - Pacing and Clinical Electrophysiology</i> , 2021 , 44, 2067	1.6	0
281	Assessment of an ECG-Based System for Localizing Ventricular Arrhythmias in Patients With Structural Heart Disease. <i>Journal of the American Heart Association</i> , 2021 , 10, e022217	6	2
280	Fast Posterior Estimation of Cardiac Electrophysiological Model Parameters Bayesian Active Learning. <i>Frontiers in Physiology</i> , 2021 , 12, 740306	4.6	2
279	Optimal ECG-lead selection increases generalizability of deep learning on ECG abnormality classification. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2021 , 379, 20200258	3	3
278	Characterizing the arrhythmogenic substrate in personalized models of atrial fibrillation: sensitivity to mesh resolution and pacing protocol in AF models. <i>Europace</i> , 2021 , 23, i3-i11	3.9	4
277	Local hyperactivation of L-type Ca channels increases spontaneous Ca release activity and cellular hypertrophy in right ventricular myocytes from heart failure rats. <i>Scientific Reports</i> , 2021 , 11, 4840	4.9	3
276	Assessment of arrhythmia mechanism and burden of the infarcted ventricles following remuscularization with pluripotent stem cell-derived cardiomyocyte patches using patient-derived models. <i>Cardiovascular Research</i> , 2021 ,	9.9	2
275	OptoGap is an optogenetics-enabled assay for quantification of cell-cell coupling in multicellular cardiac tissue. <i>Scientific Reports</i> , 2021 , 11, 9310	4.9	5
274	Computational models of atrial fibrillation: achievements, challenges, and perspectives for improving clinical care. <i>Cardiovascular Research</i> , 2021 , 117, 1682-1699	9.9	11
273	Presence of Left Atrial Fibrosis May Contribute to Aberrant Hemodynamics and Increased Risk of Stroke in Atrial Fibrillation Patients. <i>Frontiers in Physiology</i> , 2021 , 12, 657452	4.6	3
272	Impact of augmented-reality improvement in ablation catheter navigation as assessed by virtual-heart simulations of ventricular tachycardia ablation. <i>Computers in Biology and Medicine</i> , 2021 , 133, 104366	7	1

271	Predicting risk of sudden cardiac death in patients with cardiac sarcoidosis using multimodality imaging and personalized heart modeling in a multivariable classifier. <i>Science Advances</i> , 2021 , 7,	14.3	7
270	Characterization of the Electrophysiologic Remodeling of Patients With Ischemic Cardiomyopathy by Clinical Measurements and Computer Simulations Coupled With Machine Learning. <i>Frontiers in Physiology</i> , 2021 , 12, 684149	4.6	3
269	Constructing a Human Atrial Fibre Atlas. <i>Annals of Biomedical Engineering</i> , 2021 , 49, 233-250	4.7	16
268	Prospective Multicenter Assessment of a New Intra-procedural Automated System for Localizing Idiopathic Ventricular Arrhythmia Origins. <i>JACC: Clinical Electrophysiology</i> , 2021 , 7, 395-407	4.6	2
267	Bidomain Model of Defibrillation 2021 , 61-76		
266	Feasibility study shows concordance between image-based virtual-heart ablation targets and predicted ECG-based arrhythmia exit-sites. <i>PACE - Pacing and Clinical Electrophysiology</i> , 2021 , 44, 432-441	4.6	3
265	Machine Learning in Arrhythmia and Electrophysiology. <i>Circulation Research</i> , 2021 , 128, 544-566	15.7	17
264	Nanoscale Study of Calcium Handling Remodeling in Right Ventricular Cardiomyocytes Following Pulmonary Hypertension. <i>Hypertension</i> , 2021 , 77, 605-616	8.5	2
263	The role of sex and inflammation in cardiovascular outcomes and mortality in COVID-19. <i>International Journal of Cardiology</i> , 2021 , 337, 127-131	3.2	4
262	Artificial intelligence in the diagnosis and management of arrhythmias. <i>European Heart Journal</i> , 2021 , 42, 3904-3916	9.5	13
261	Optogenetic Stimulation Using Anion Channelrhodopsin (GtACR1) Facilitates Termination of Reentrant Arrhythmias With Low Light Energy Requirements: A Computational Study. <i>Frontiers in Physiology</i> , 2021 , 12, 718622	4.6	1
260	Analyzing the Role of Repolarization Gradients in Post-infarct Ventricular Tachycardia Dynamics Using Patient-Specific Computational Heart Models. <i>Frontiers in Physiology</i> , 2021 , 12, 740389	4.6	0
259	Whole-heart ventricular arrhythmia modeling moving forward: Mechanistic insights and translational applications. <i>Biophysics Reviews</i> , 2021 , 2, 031304	2.6	2
258	Electromechanical modeling of human ventricles with ischemic cardiomyopathy: numerical simulations in sinus rhythm and under arrhythmia. <i>Computers in Biology and Medicine</i> , 2021 , 136, 104674	7	7
257	Computational modeling of aberrant electrical activity following revascularization with intramyocardially injected pluripotent stem cell-derived cardiomyocytes. <i>Journal of Molecular and Cellular Cardiology</i> , 2021 , 162, 97-109	5.8	3
256	Preprocedure Application of Machine Learning and Mechanistic Simulations Predicts Likelihood of Paroxysmal Atrial Fibrillation Recurrence Following Pulmonary Vein Isolation. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2020 , 13, e008213	6.4	29
255	Prospective Assessment of an Automated Intra-procedural 12-Lead ECG-Based System for Localization of Early Left Ventricular Activation. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2020 , 13, e008262	6.4	9
254	Utility of Cardiac MRI in Atrial Fibrillation Management. <i>Cardiac Electrophysiology Clinics</i> , 2020 , 12, 131-139	3.9	2

253	Substrate Spatial Complexity Analysis for the Prediction of Ventricular Arrhythmias in Patients With Ischemic Cardiomyopathy. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2020 , 13, e007975	6.4	11
252	Accurate Conduction Velocity Maps and Their Association With Scar Distribution on Magnetic Resonance Imaging in Patients With Postinfarction Ventricular Tachycardias. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2020 , 13, e007792	6.4	8
251	Nanoscale regulation of L-type calcium channels differentiates between ischemic and dilated cardiomyopathies. <i>EBioMedicine</i> , 2020 , 57, 102845	8.8	11
250	Artificial Intelligence and Machine Learning in Arrhythmias and Cardiac Electrophysiology. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2020 , 13, e007952	6.4	38
249	Embedding high-dimensional Bayesian optimization via generative modeling: Parameter personalization of cardiac electrophysiological models. <i>Medical Image Analysis</i> , 2020 , 62, 101670	15.4	7
248	How personalized heart modeling can help treatment of lethal arrhythmias: A focus on ventricular tachycardia ablation strategies in post-infarction patients. <i>Wiley Interdisciplinary Reviews: Systems Biology and Medicine</i> , 2020 , 12, e1477	6.6	8
247	Mechano-electric and mechano-chemo-transduction in cardiomyocytes. <i>Journal of Physiology</i> , 2020 , 598, 1285-1305	3.9	21
246	Hydrogen peroxide diffusion and scavenging shapes mitochondrial network instability and failure by sensitizing ROS-induced ROS release. <i>Scientific Reports</i> , 2020 , 10, 15758	4.9	7
245	Personalized Digital-Heart Technology for Ventricular Tachycardia Ablation Targeting in Hearts With Infiltrating Adiposity. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2020 , 13, e008912	6.4	3
244	Ventricular arrhythmia risk prediction in repaired Tetralogy of Fallot using personalized computational cardiac models. <i>Heart Rhythm</i> , 2020 , 17, 408-414	6.7	15
243	Characterizing Conduction Channels in Postinfarction Patients Using a Personalized Virtual Heart. <i>Biophysical Journal</i> , 2019 , 117, 2287-2294	2.9	12
242	The role of personalized atrial modeling in understanding atrial fibrillation mechanisms and improving treatment. <i>International Journal of Cardiology</i> , 2019 , 287, 139-147	3.2	10
241	New insights on the cardiac safety factor: Unraveling the relationship between conduction velocity and robustness of propagation. <i>Journal of Molecular and Cellular Cardiology</i> , 2019 , 128, 117-128	5.8	11
240	A comprehensive, multiscale framework for evaluation of arrhythmias arising from cell therapy in the whole post-myocardial infarcted heart. <i>Scientific Reports</i> , 2019 , 9, 9238	4.9	12
239	Sensitivity of Ablation Targets Prediction to Electrophysiological Parameter Variability in Image-Based Computational Models of Ventricular Tachycardia in Post-infarction Patients. <i>Frontiers in Physiology</i> , 2019 , 10, 628	4.6	17
238	Universal atrial coordinates applied to visualisation, registration and construction of patient specific meshes. <i>Medical Image Analysis</i> , 2019 , 55, 65-75	15.4	30
237	Computational Identification of Ventricular Arrhythmia Risk in Pediatric Myocarditis. <i>Pediatric Cardiology</i> , 2019 , 40, 857-864	2.1	9
236	Arrhythmogenic propensity of the fibrotic substrate after atrial fibrillation ablation: a longitudinal study using magnetic resonance imaging-based atrial models. <i>Cardiovascular Research</i> , 2019 , 115, 1757-1765	8.9	25

235	Tropomyosin dynamics during cardiac muscle contraction as governed by a multi-well energy landscape. <i>Progress in Biophysics and Molecular Biology</i> , 2019 , 144, 102-115	4.7	3
234	Computationally guided personalized targeted ablation of persistent atrial fibrillation. <i>Nature Biomedical Engineering</i> , 2019 , 3, 870-879	19	89
233	4D cardiac electromechanical activation imaging. <i>Computers in Biology and Medicine</i> , 2019 , 113, 103382	7	8
232	Epicardial Conduction Speed, Electrogram Abnormality, and Computed Tomography Attenuation Associations in Arrhythmogenic Right Ventricular Cardiomyopathy. <i>JACC: Clinical Electrophysiology</i> , 2019 , 5, 1158-1167	4.6	6
231	Understanding AF Mechanisms Through Computational Modelling and Simulations. <i>Arrhythmia and Electrophysiology Review</i> , 2019 , 8, 210-219	3.2	11
230	From genetics to smart watches: developments in precision cardiology. <i>Nature Reviews Cardiology</i> , 2019 , 16, 72-73	14.8	14
229	Computational models in cardiology. <i>Nature Reviews Cardiology</i> , 2019 , 16, 100-111	14.8	121
228	Association of regional myocardial conduction velocity with the distribution of hypoattenuation on contrast-enhanced perfusion computed tomography in patients with postinfarct ventricular tachycardia. <i>Heart Rhythm</i> , 2019 , 16, 588-594	6.7	10
227	Effect of KCNQ1 G229D mutation on cardiac pumping efficacy and reentrant dynamics in ventricles: Computational study. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2018 , 34, e2970	2.6	8
226	Cardiac Optogenetics: 2018. <i>JACC: Clinical Electrophysiology</i> , 2018 , 4, 155-167	4.6	35
225	Termination of re-entrant atrial tachycardia via optogenetic stimulation with optimized spatial targeting: insights from computational models. <i>Journal of Physiology</i> , 2018 , 596, 181-196	3.9	10
224	Computational prediction of the effects of the intra-aortic balloon pump on heart failure with valvular regurgitation using a 3D cardiac electromechanical model. <i>Medical and Biological Engineering and Computing</i> , 2018 , 56, 853-863	3.1	5
223	Comparing Reentrant Drivers Predicted by Image-Based Computational Modeling and Mapped by Electrocardiographic Imaging in Persistent Atrial Fibrillation. <i>Frontiers in Physiology</i> , 2018 , 9, 414	4.6	28
222	Increased thin filament activation enhances alternans in human chronic atrial fibrillation. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2018 , 315, H1453-H1462	5.2	3
221	Field of view of mapping catheters quantified by electrogram associations with radius of myocardial attenuation on contrast-enhanced cardiac computed tomography. <i>Heart Rhythm</i> , 2018 , 15, 1617-1625	6.7	3
220	Role of 3-Dimensional Architecture of Scar and Surviving Tissue in Ventricular Tachycardia: Insights From High-Resolution Ex Vivo Porcine Models. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2018 , 11, e006131	6.4	22
219	Computational Heart Modeling for Evaluating Efficacy of MRI Techniques in Predicting Appropriate ICD Therapy. <i>Lecture Notes in Computer Science</i> , 2018 , 446-454	0.9	
218	Modeling the Aging Heart 2018 , 345-355		

217	Computational analysis of the effect of mitral and aortic regurgitation on the function of ventricular assist devices using 3D cardiac electromechanical model. <i>Medical and Biological Engineering and Computing</i> , 2018 , 56, 889-898	3.1	2
216	Personalized Imaging and Modeling Strategies for Arrhythmia Prevention and Therapy. <i>Current Opinion in Biomedical Engineering</i> , 2018 , 5, 21-28	4.4	14
215	Influence of LVAD function on mechanical unloading and electromechanical delay: a simulation study. <i>Medical and Biological Engineering and Computing</i> , 2018 , 56, 911-921	3.1	5
214	Relationship Between Fibrosis Detected on Late Gadolinium-Enhanced Cardiac Magnetic Resonance and Re-Entrant Activity Assessed With Electrocardiographic Imaging in Human Persistent Atrial Fibrillation. <i>JACC: Clinical Electrophysiology</i> , 2018 , 4, 17-29	4.6	71
213	Degradation of T-Tubular Microdomains and Altered cAMP Compartmentation Lead to Emergence of Arrhythmogenic Triggers in Heart Failure Myocytes: An Study. <i>Frontiers in Physiology</i> , 2018 , 9, 1737	4.6	8
212	Initiation of a High-Frequency Jet Ventilation Strategy for Catheter Ablation for Atrial Fibrillation: Safety and Outcomes Data. <i>JACC: Clinical Electrophysiology</i> , 2018 , 4, 1519-1525	4.6	19
211	Arrhythmia dynamics in computational models of the atria following virtual ablation of re-entrant drivers. <i>Europace</i> , 2018 , 20, iii45-iii54	3.9	10
210	Optimal contrast-enhanced MRI image thresholding for accurate prediction of ventricular tachycardia using ex-vivo high resolution models. <i>Computers in Biology and Medicine</i> , 2018 , 102, 426-432 ⁷		4
209	Virtual electrophysiological study as a tool for evaluating efficacy of MRI techniques in predicting adverse arrhythmic events in ischemic patients. <i>Physics in Medicine and Biology</i> , 2018 , 63, 225008	3.8	5
208	Personalized virtual-heart technology for guiding the ablation of infarct-related ventricular tachycardia. <i>Nature Biomedical Engineering</i> , 2018 , 2, 732-740	19	106
207	The Fibrotic Substrate in Persistent Atrial Fibrillation Patients: Comparison Between Predictions From Computational Modeling and Measurements From Focal Impulse and Rotor Mapping. <i>Frontiers in Physiology</i> , 2018 , 9, 1151	4.6	22
206	Quantifying the uncertainty in model parameters using Gaussian process-based Markov chain Monte Carlo in cardiac electrophysiology. <i>Medical Image Analysis</i> , 2018 , 48, 43-57	15.4	23
205	Spatially Adaptive Multi-Scale Optimization for Local Parameter Estimation in Cardiac Electrophysiology. <i>IEEE Transactions on Medical Imaging</i> , 2017 , 36, 1966-1978	11.7	15
204	Sensitivity of reentrant driver localization to electrophysiological parameter variability in image-based computational models of persistent atrial fibrillation sustained by a fibrotic substrate. <i>Chaos</i> , 2017 , 27, 093932	3.3	41
203	Principles and Applications of Computer Modeling in Patients With Devices 2017 , 579-588		
202	Plakophilin-2 is required for transcription of genes that control calcium cycling and cardiac rhythm. <i>Nature Communications</i> , 2017 , 8, 106	17.4	94
201	Using personalized computer models to custom-tailor ablation procedures for atrial fibrillation patients: are we there yet?. <i>Expert Review of Cardiovascular Therapy</i> , 2017 , 15, 339-341	2.5	13
200	Imaging-Based Simulations for Predicting Sudden Death and Guiding Ventricular Tachycardia Ablation. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2017 , 10,	6.4	32

199	Myofilament protein dynamics modulate EAD formation in human hypertrophic cardiomyopathy. <i>Progress in Biophysics and Molecular Biology</i> , 2017 , 130, 418-428	4.7	7
198	Submillimeter diffusion tensor imaging and late gadolinium enhancement cardiovascular magnetic resonance of chronic myocardial infarction. <i>Journal of Cardiovascular Magnetic Resonance</i> , 2017 , 19, 9	6.9	32
197	How computer simulations of the human heart can improve anti-arrhythmia therapy. <i>Journal of Physiology</i> , 2016 , 594, 2483-502	3.9	29
196	Towards personalized computational modelling of the fibrotic substrate for atrial arrhythmia. <i>Europace</i> , 2016 , 18, iv136-iv145	3.9	34
195	Light-based Approaches to Cardiac Arrhythmia Research: From Basic Science to Translational Applications. <i>Clinical Medicine Insights: Cardiology</i> , 2016 , 10, 47-60	3.2	5
194	Tropomyosin Dynamics during Cardiac Thin Filament Activation as Governed by a Multi-Well Energy Landscape. <i>Biophysical Journal</i> , 2016 , 110, 524a	2.9	3
193	Rate-dependent force, intracellular calcium, and action potential voltage alternans are modulated by sarcomere length and heart failure induced-remodeling of thin filament regulation in human heart failure: A myocyte modeling study. <i>Progress in Biophysics and Molecular Biology</i> , 2016 , 120, 270-80	4.7	12
192	Myocardial Infarct Segmentation From Magnetic Resonance Images for Personalized Modeling of Cardiac Electrophysiology. <i>IEEE Transactions on Medical Imaging</i> , 2016 , 35, 1408-1419	11.7	28
191	Association of Left Atrial Local Conduction Velocity With Late Gadolinium Enhancement on Cardiac Magnetic Resonance in Patients With Atrial Fibrillation. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2016 , 9, e002897	6.4	54
190	Precisely parameterized experimental and computational models of tissue organization. <i>Integrative Biology (United Kingdom)</i> , 2016 , 8, 230-242	3.7	9
189	Lack of regional association between atrial late gadolinium enhancement on cardiac magnetic resonance and atrial fibrillation rotors. <i>Heart Rhythm</i> , 2016 , 13, 654-60	6.7	40
188	Optogenetic defibrillation terminates ventricular arrhythmia in mouse hearts and human simulations. <i>Journal of Clinical Investigation</i> , 2016 , 126, 3894-3904	15.9	89
187	Intermittent drivers anchoring to structural heterogeneities as a major pathophysiological mechanism of human persistent atrial fibrillation. <i>Journal of Physiology</i> , 2016 , 594, 2387-98	3.9	86
186	Opsin spectral sensitivity determines the effectiveness of optogenetic termination of ventricular fibrillation in the human heart: a simulation study. <i>Journal of Physiology</i> , 2016 , 594, 6879-6891	3.9	31
185	Mechanisms of arrhythmogenesis related to calcium-driven alternans in a model of human atrial fibrillation. <i>Scientific Reports</i> , 2016 , 6, 36395	4.9	15
184	Modelling methodology of atrial fibrosis affects rotor dynamics and electrograms. <i>Europace</i> , 2016 , 18, iv146-iv155	3.9	66
183	Evaluation of a T1 mapping technique for stratifying patient risk: A preliminary study using computer simulations of cardiac electrophysiology 2016 ,		1
182	Arrhythmia risk stratification of patients after myocardial infarction using personalized heart models. <i>Nature Communications</i> , 2016 , 7, 11437	17.4	197

181	A feasibility study of arrhythmia risk prediction in patients with myocardial infarction and preserved ejection fraction. <i>Europace</i> , 2016 , 18, iv60-iv66	3.9	34
180	Feasibility of using patient-specific models and the "minimum cut" algorithm to predict optimal ablation targets for left atrial flutter. <i>Heart Rhythm</i> , 2016 , 13, 1687-98	6.7	65
179	Patient-derived models link re-entrant driver localization in atrial fibrillation to fibrosis spatial pattern. <i>Cardiovascular Research</i> , 2016 , 110, 443-54	9.9	156
178	Myofiber Architecture of the Human Atria as Revealed by Submillimeter Diffusion Tensor Imaging. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2016 , 9, e004133	6.4	84
177	Multi-scale Modeling of the Cardiovascular System: Disease Development, Progression, and Clinical Intervention. <i>Annals of Biomedical Engineering</i> , 2016 , 44, 2642-60	4.7	36
176	Computational rabbit models to investigate the initiation, perpetuation, and termination of ventricular arrhythmia. <i>Progress in Biophysics and Molecular Biology</i> , 2016 , 121, 185-94	4.7	8
175	Association of left atrial epicardial adipose tissue with electrogram bipolar voltage and fractionation: Electrophysiologic substrates for atrial fibrillation. <i>Heart Rhythm</i> , 2016 , 13, 2333-2339	6.7	29
174	Microdomain-Specific Modulation of L-Type Calcium Channels Leads to Triggered Ventricular Arrhythmia in Heart Failure. <i>Circulation Research</i> , 2016 , 119, 944-55	15.7	75
173	Early somatic mosaicism is a rare cause of long-QT syndrome. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 11555-11560	11.5	30
172	Image-based Reconstruction of 3D Myocardial Infarct Geometry for Patient Specific Applications. <i>Proceedings of SPIE</i> , 2015 , 9413,	1.7	6
171	Harnessing the Power of Integrated Mitochondrial Biology and Physiology: A Special Report on the NHLBI Mitochondria in Heart Diseases Initiative. <i>Circulation Research</i> , 2015 , 117, 234-8	15.7	9
170	Cardiac Arrhythmias: Mechanistic Knowledge and Innovation from Computer Models. <i>Modeling, Simulation and Applications</i> , 2015 , 1-27	1.1	
169	Image-based reconstruction of three-dimensional myocardial infarct geometry for patient-specific modeling of cardiac electrophysiology. <i>Medical Physics</i> , 2015 , 42, 4579-90	4.4	34
168	"Beauty is a light in the heart": the transformative potential of optogenetics for clinical applications in cardiovascular medicine. <i>Trends in Cardiovascular Medicine</i> , 2015 , 25, 73-81	6.9	27
167	Verification of cardiac mechanics software: benchmark problems and solutions for testing active and passive material behaviour. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015 , 471, 20150641	2.4	61
166	Optogenetics-enabled assessment of viral gene and cell therapy for restoration of cardiac excitability. <i>Scientific Reports</i> , 2015 , 5, 17350	4.9	29
165	A New MRI-Based Model of Heart Function with Coupled Hemodynamics and Application to Normal and Diseased Canine Left Ventricles. <i>Frontiers in Bioengineering and Biotechnology</i> , 2015 , 3, 140	5.8	18
164	Accuracy of prediction of infarct-related arrhythmic circuits from image-based models reconstructed from low and high resolution MRI. <i>Frontiers in Physiology</i> , 2015 , 6, 282	4.6	41

163	Modeling the aging heart: from local respiratory defects to global rhythm disturbances. <i>Cell Metabolism</i> , 2015 , 21, 662-3	24.6	1
162	Computational modeling of cardiac optogenetics: Methodology overview & review of findings from simulations. <i>Computers in Biology and Medicine</i> , 2015 , 65, 200-8	7	24
161	Computational analysis of the effect of valvular regurgitation on ventricular mechanics using a 3D electromechanics model. <i>Journal of Physiological Sciences</i> , 2015 , 65, 159-64	2.3	17
160	Virtual electrophysiological study of atrial fibrillation in fibrotic remodeling. <i>PLoS ONE</i> , 2015 , 10, e0117119	3.9	88
159	Caveolin-3 regulates compartmentation of cardiomyocyte beta2-adrenergic receptor-mediated cAMP signaling. <i>Journal of Molecular and Cellular Cardiology</i> , 2014 , 67, 38-48	5.8	76
158	Your personal virtual heart. <i>IEEE Spectrum</i> , 2014 , 51, 34-59	1.7	6
157	Effects of regional mitochondrial depolarization on electrical propagation: implications for arrhythmogenesis. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2014 , 7, 143-51	6.4	43
156	Mathematical approaches to understanding and imaging atrial fibrillation: significance for mechanisms and management. <i>Circulation Research</i> , 2014 , 114, 1516-31	15.7	68
155	Image-based left ventricular shape analysis for sudden cardiac death risk stratification. <i>Heart Rhythm</i> , 2014 , 11, 1693-700	6.7	23
154	Computational models of heart disease. <i>Drug Discovery Today: Disease Models</i> , 2014 , 14, 1-2	1.3	1
153	Sodium current reduction unmasks a structure-dependent substrate for arrhythmogenesis in the normal ventricles. <i>PLoS ONE</i> , 2014 , 9, e86947	3.7	18
152	Cardiac Electromechanical Models 2014 , 361-369		
151	Advances in modeling ventricular arrhythmias: from mechanisms to the clinic. <i>Wiley Interdisciplinary Reviews: Systems Biology and Medicine</i> , 2014 , 6, 209-24	6.6	29
150	New insights into defibrillation of the heart from realistic simulation studies. <i>Europace</i> , 2014 , 16, 705-13	3.9	13
149	Disrupted calcium release as a mechanism for atrial alternans associated with human atrial fibrillation. <i>PLoS Computational Biology</i> , 2014 , 10, e1004011	5	32
148	Exploring susceptibility to atrial and ventricular arrhythmias resulting from remodeling of the passive electrical properties in the heart: a simulation approach. <i>Frontiers in Physiology</i> , 2014 , 5, 435	4.6	27
147	See the light: can optogenetics restore healthy heartbeats? And, if it can, is it really worth the effort?. <i>Expert Review of Cardiovascular Therapy</i> , 2014 , 12, 17-20	2.5	17
146	Optogenetics-enabled dynamic modulation of action potential duration in atrial tissue: feasibility of a novel therapeutic approach. <i>Europace</i> , 2014 , 16 Suppl 4, iv69-iv76	3.9	24

145	Optimizing cardiac resynchronization therapy to minimize ATP consumption heterogeneity throughout the left ventricle: a simulation analysis using a canine heart failure model. <i>Heart Rhythm</i> , 2014 , 11, 1063-9	6.7	22
144	Myocardial infarct segmentation and reconstruction from 2D late-gadolinium enhanced magnetic resonance images. <i>Lecture Notes in Computer Science</i> , 2014 , 17, 554-61	0.9	8
143	A comprehensive multiscale framework for simulating optogenetics in the heart. <i>Nature Communications</i> , 2013 , 4, 2370	17.4	81
142	Placement of implantable cardioverter-defibrillators in paediatric and congenital heart defect patients: a pipeline for model generation and simulation prediction of optimal configurations. <i>Journal of Physiology</i> , 2013 , 591, 4321-34	3.9	38
141	Feasibility of image-based simulation to estimate ablation target in human ventricular arrhythmia. <i>Heart Rhythm</i> , 2013 , 10, 1109-16	6.7	131
140	Terminating ventricular tachyarrhythmias using far-field low-voltage stimuli: mechanisms and delivery protocols. <i>Heart Rhythm</i> , 2013 , 10, 1209-17	6.7	46
139	Mechanistic inquiry into the role of tissue remodeling in fibrotic lesions in human atrial fibrillation. <i>Biophysical Journal</i> , 2013 , 104, 2764-73	2.9	89
138	Efficient preloading of the ventricles by a properly timed atrial contraction underlies stroke work improvement in the acute response to cardiac resynchronization therapy. <i>Heart Rhythm</i> , 2013 , 10, 1800-6	6.7	23
137	Defibrillation success with high frequency electric fields is related to degree and location of conduction block. <i>Heart Rhythm</i> , 2013 , 10, 740-8	6.7	21
136	Arrhythmia risk stratification based on QT interval instability: an intracardiac electrocardiogram study. <i>Heart Rhythm</i> , 2013 , 10, 875-80	6.7	13
135	Mechanistic insight into prolonged electromechanical delay in dyssynchronous heart failure: a computational study. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2013 , 305, H1265-73	5.3	16
134	In the spotlight: Cardiovascular engineering. <i>IEEE Reviews in Biomedical Engineering</i> , 2013 , 6, 19-20	6.4	
133	Estimation of ventricular fiber orientations in infarcted hearts for patient-specific simulations 2013 ,		1
132	Patient-specific modeling of the heart: estimation of ventricular fiber orientations. <i>Journal of Visualized Experiments</i> , 2013 ,	1.6	4
131	Effects of mechano-electric feedback on scroll wave stability in human ventricular fibrillation. <i>PLoS ONE</i> , 2013 , 8, e60287	3.7	39
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