Gary R. Mirams

List of Publications by Year
in descending order

85 papers	4,197 citations	87888 38 h-index	128289 60 g-index
107 all docs	107 docs citations	107 times ranked	4053 citing authors

#	Article	IF	Citations
1	Chaste: An Open Source C++ Library for Computational Physiology and Biology. PLoS Computational Biology, 2013, 9, e1002970.	3.2	375
2	Simulation of multiple ion channel block provides improved early prediction of compoundsâ€™ clinical torsadogenic risk. Cardiovascular Research, 2011, 91, 53-61.	3.8	282
3	Chaste: A test-driven approach to software development for biological modelling. Computer Physics Communications, 2009, 180, 2452-2471.	7.5	207
4	An integrative computational model for intestinal tissue renewal. Cell Proliferation, 2009, 42, 617-636.	5.3	142
5	Application of human stem cell-derived cardiomyocytes in safety pharmacology requires caution beyond hERG. Journal of Molecular and Cellular Cardiology, 2012, 52, 998-1008.	1.9	136
6	Uncertainty and variability in computational and mathematical models of cardiac physiology. Journal of Physiology, 2016, 594, 6833-6847.	2.9	127
7	Hydroxychloroquine reduces heart rate by modulating the hyperpolarization-activated current If: Novel electrophysiological insights and therapeutic potential. Heart Rhythm, 2015, 12, 2186-2194.	0.7	124
8	Assessment of an <i>In Silico</i> Mechanistic Model for Proarrhythmia Risk Prediction Under the Ci<scp>PA</scp> Initiative. Clinical Pharmacology and Therapeutics, 2019, 105, 466-475.	4.7	124
9	Uncertainty and variability in models of the cardiac action potential: Can we build trustworthy models?. Journal of Molecular and Cellular Cardiology, 2016, 96, 49-62.	1.9	113
10	A hybrid approach to multi-scale modelling of cancer. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 5013-5028.	3.4	103
11	A computational study of discrete mechanical tissue models. Physical Biology, 2009, 6, 036001.	1.8	99
12	Computational assessment of drugâ€induced effects on the electrocardiogram: from ion channel to body surface potentials. British Journal of Pharmacology, 2013, 168, 718-733.	5.4	98
13	Systems Toxicology: Real World Applications and Opportunities. Chemical Research in Toxicology, 2017, 30, 870-882.	3.3	93
14	Application of cardiac electrophysiology simulations to proâ€arrhythmic safety testing. British Journal of Pharmacology, 2012, 167, 932-945.	5.4	90
15	Prediction of Thorough QT study results using action potential simulations based on ion channel screens. Journal of Pharmacological and Toxicological Methods, 2014, 70, 246-254.	0.7	80
16	Variability in high-throughput ion-channel screening data and consequences for cardiac safety assessment. Journal of Pharmacological and Toxicological Methods, 2013, 68, 112-122.	0.7	79
17	Minimum Information about a Cardiac Electrophysiology Experiment (MICEE): Standardised reporting for model reproducibility, interoperability, and data sharing. Progress in Biophysics and Molecular Biology, 2011, 107, 4-10.	2.9	75
18	Uncertainty Quantification Reveals the Importance of Data Variability and Experimental Design Considerations for in Silico Proarrhythmia Risk Assessment. Frontiers in Physiology, 2017, 8, 917.	2.8	71

#	Article	IF	Citations
19	General Principles for the Validation of Proarrhythmia Risk Prediction Models: An Extension of the CiPA <i>In Silico</i> Strategy. Clinical Pharmacology and Therapeutics, 2020, 107, 102-111.	4.7	67
20	Modelling Spatially Regulated Î²-Catenin Dynamics and Invasion inÂIntestinal Crypts. Biophysical Journal, 2010, 99, 716-725.	0.5	66
21	Sequential forward and reverse transport of the Na+ Ca2+ exchanger generates Ca2+ oscillations within mitochondria. Nature Communications, 2018, 9, 156.	12.8	66
22	Evaluation of an in silico cardiac safety assay: Using ion channel screening data to predict QT interval changes in the rabbit ventricular wedge. Journal of Pharmacological and Toxicological Methods, 2013, 68, 88-96.	0.7	62
23	Calibration of ionic and cellular cardiac electrophysiology models. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2020, 12, e1482.	6.6	62
24	mRNA Expression Levels in Failing Human Hearts Predict Cellular Electrophysiological Remodeling: A Population-Based Simulation Study. PLoS ONE, 2013, 8, e56359.	2.5	61
25	High resolution structural evidence suggests the Sarcoplasmic Reticulum forms microdomains with Acidic Stores (lysosomes) in the heart. Scientific Reports, 2017, 7, 40620.	3.3	59
26	Control of NFAT Isoform Activation and NFAT-Dependent Gene Expression through Two Coincident and Spatially Segregated Intracellular Ca 2+ Signals. Molecular Cell, 2016, 64, 746-759.	9.7	58
27	Chaste: Cancer, Heart and Soft Tissue Environment. Journal of Open Source Software, 2020, 5, 1848.	4.6	58
28	A theoretical investigation of the effect of proliferation and adhesion on monoclonal conversion in the colonic crypt. Journal of Theoretical Biology, 2012, 312, 143-156.	1.7	57
29	Recent developments in using mechanistic cardiac modelling for drug safety evaluation. Drug Discovery Today, 2016, 21, 924-938.	6.4	55
30	Sinusoidal voltage protocols for rapid characterisation of ion channel kinetics. Journal of Physiology, 2018, 596, 1813-1828.	2.9	54
31	Four Ways to Fit an Ion Channel Model. Biophysical Journal, 2019, 117, 2420-2437.	0.5	53
32	Cardiac tissue slices: preparation, handling, and successful optical mapping. American Journal of Physiology - Heart and Circulatory Physiology, 2015, 308, H1112-H1125.	3.2	52
33	A multiple timescale analysis of a mathematical model of the Wnt/Î²-catenin signalling pathway. Journal of Mathematical Biology, 2010, 60, 131-160.	1.9	51
34	Connexin43 contributes to electrotonic conduction across scar tissue in the intact heart. Scientific Reports, 2016, 6, 26744.	3.3	49
35	The Cardiac Electrophysiology Web Lab. Biophysical Journal, 2016, 110, 292-300.	0.5	49
36	Ten Simple Rules for Effective Computational Research. PLoS Computational Biology, 2014, 10, e1003506.	3.2	47

#	Article	IF	Citations
37	High-throughput functional curation of cellular electrophysiology models. Progress in Biophysics and Molecular Biology, 2011, 107, 11-20.	2.9	46
38	Considering discrepancy when calibrating a mechanistic electrophysiology model. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190349.	3.4	46
39	The significant effect of the choice of ionic current integration method in cardiac electroâ€physiological simulations. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 1751-1770.	2.1	45
40	Tailoring Mathematical Models to Stem-Cell Derived Cardiomyocyte Lines Can Improve Predictions of Drug-Induced Changes to Their Electrophysiology. Frontiers in Physiology, 2017, 8, 986.	2.8	42
41	Probabilistic Inference on Noisy Time Series (PINTS). Journal of Open Research Software, 2019, 7, 23.	5.9	41
42	Rapid Characterization of hERG Channel Kinetics I: Using an Automated High-Throughput System. Biophysical Journal, 2019, 117, 2438-2454.	0.5	39
43	Rapid Characterization of hERG Channel Kinetics II: Temperature Dependence. Biophysical Journal, 2019, 117, 2455-2470.	0.5	38
44	Accounting for variability in ion current recordings using a mathematical model of artefacts in voltage-clamp experiments. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190348.	3.4	38
45	Ca2+ Channel Re-localization to Plasma-Membrane Microdomains Strengthens Activation of Ca2+-Dependent Nuclear Gene Expression. Cell Reports, 2015, 12, 203-216.	6.4	30
46	A systematic strategy for estimating hERG block potency and its implications in a new cardiac safety paradigm. Toxicology and Applied Pharmacology, 2020, 394, 114961.	2.8	30
47	A web portal for in-silico action potential predictions. Journal of Pharmacological and Toxicological Methods, 2015, 75, 10-16.	0.7	28
48	Cellular cardiac electrophysiology modeling with Chaste and CellML. Frontiers in Physiology, 2014, 5, 511.	2.8	27
49	Hierarchical Bayesian inference for ion channel screening dose-response data. Wellcome Open Research, 2016, 1, 6.	1.8	22
50	Reproducible model development in the cardiac electrophysiology Web Lab. Progress in Biophysics and Molecular Biology, 2018, 139, 3-14.	2.9	21
51	Hierarchical Bayesian inference for ion channel screening dose-response data. Wellcome Open Research, 0, 1, 6.	1.8	21
52	Selective recruitment of different Ca2+-dependent transcription factors by STIM1-Orai1 channel clusters. Nature Communications, 2019, 10, 2516.	12.8	20
53	Early afterdepolarisation tendency as a simulated pro-arrhythmic risk indicator. Toxicology Research, 2017, 6, 912-921.	2.1	18
54	The fickle heart: uncertainty quantification in cardiac and cardiovascular modelling and simulation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200119.	3.4	17

#	Article	IF	Citations
55	Is it time for <i>in silico</i> simulation of drug cardiac side effects?. Annals of the New York Academy of Sciences, 2011, 1245, 44-47.	3.8	16
56	Nonclinical cardiovascular safety of pitolisant: comparing International Conference on Harmonization S7B and Comprehensive <i>in vitro</i> Proâ€arrhythmia Assay initiative studies. British Journal of Pharmacology, 2017, 174, 4449-4463.	5.4	15
57	A local sensitivity analysis method for developing biological models with identifiable parameters: Application to cardiac ionic channel modelling. Future Generation Computer Systems, 2013, 29, 591-598.	7.5	14
58	Computational cardiology and risk stratification for sudden cardiac death: one of the grand challenges for cardiology in the 21st century. Journal of Physiology, 2016, 594, 6893-6908.	2.9	14
59	Distinguishing possible mechanisms for auxin-mediated developmental control in Arabidopsis: Models with two Aux/IAA and ARF proteins, and two target gene-sets. Mathematical Biosciences, 2012, 235, 32-44.	1.9	13
60	Cardiac TdP risk stratification modelling of anti-infective compounds including chloroquine and hydroxychloroquine. Royal Society Open Science, 2021, 8, 210235.	2.4	13
61	Application of stochastic phenomenological modelling to cell-to-cell and beat-to-beat electrophysiological variability in cardiac tissue. Journal of Theoretical Biology, 2015, 365, 325-336.	1.7	11
62	Electrophysiological characterization of the hERG R56Q LQTS variant and targeted rescue by the activator RPR260243. Journal of General Physiology, 2021, 153, .	1.9	8
63	Phenomenological modeling of cell-to-cell and beat-to-beat variability in isolated Guinea Pig ventricular myocytes. , 2010, 2010, 1457-60.		7
64	Defining vitamin D status using multi-metabolite mathematical modelling: A pregnancy perspective. Journal of Steroid Biochemistry and Molecular Biology, 2019, 190, 152-160.	2.5	7
65	A nonlinear and time-dependent leak current in the presence of calcium fluoride patch-clamp seal enhancer. Wellcome Open Research, 2020, 5, 152.	1.8	6
66	A nonlinear and time-dependent leak current in the presence of calcium fluoride patch-clamp seal enhancer. Wellcome Open Research, 0, 5, 152.	1.8	6
67	Representation of Multiple Cellular Phenotypes Within Tissue-Level Simulations of Cardiac Electrophysiology. Bulletin of Mathematical Biology, 2019, 81, 7-38.	1.9	4
68	Use of Patient Health Records to Quantify Drug-Related Pro-arrhythmic Risk. Cell Reports Medicine, 2020, 1, 100076.	6.5	4
69	Response to â€œCi PA 's Complexity Biasâ€ Clinical Pharmacology and Therapeutics, 2019, 105, 1325-1325.	4.7	3
70	Hierarchical Bayesian Modelling of Variability and Uncertainty in Synthetic Action Potential Traces. , 0, , .		3
71	Stochasticity in Action Potential duration Enhances Dispersion of Repolarisation at Fast Pacing Rates. Biophysical Journal, 2012, 102, 592a-593a.	0.5	2
72	Simulated micro-electrode array recordings from stem cell-derived cardiomyocytes. Journal of Pharmacological and Toxicological Methods, 2016, 81, 380.	0.7	2

#	Article	IF	Citations
73	â–ª Cancer Cell: Linking Oncogenic Signaling to Molecular Structure. , 2010, , 56-69.		2
74	Spatiotemporal Transitions in Cardiac Neuronal Co-Cultures. Biophysical Journal, 2014, 106, 630a.	0.5	1
75	Novel Voltage Protocols for Determining hERG Channel Kinetics. Biophysical Journal, 2015, 108, 121a.	0.5	1
76	chaste codegen: automatic CellML to C++ code generation with fixes for singularities and automatically generated Jacobians. Wellcome Open Research, 2021, 6, 261.	1.8	1
77	A Local Sensitivity Analysis Method for Developing Biological Models with Identifiable Parameters: Application to L-type Calcium Channel Modelling. , 2010, , .		0
78	6â€…Can you teach an old dog new tricks? The anti-malarial hydroxychloroquine shows promise in cardiac rate control through actions at the sino-atrial node. Heart, 2015, 101, A2.3-A2.	2.9	0
79	Simulation of L-Type Calcium Currents using Different Experimental Data Sources: from Cell Line to iPS-Derived Cardiomyocyte. Biophysical Journal, 2016, 110, 450a.	0.5	0
80	Importance of parameter control in cardiac models for robust pro-arrhythmic risk prediction. Journal of Pharmacological and Toxicological Methods, 2016, 81, 361.	0.7	0
81	Cell-specific mathematical models of cardiac electrophysiology. Journal of Pharmacological and Toxicological Methods, 2016, 81, 343.	0.7	0
82	Sinusoidal Voltage Protocols for Rapid Characterisation of Ion Channel Kinetics. Biophysical Journal, 2018, 114, 293a-294a.	0.5	0
83	High-throughput measurement and modeling of hERG kinetics using an automated platform. Journal of Pharmacological and Toxicological Methods, 2019, 99, 106595.	0.7	0
84	Estimation of Conductivity Tensors from Human Ventricular Optical Mapping Recordings. Lecture Notes in Computer Science, 2013, , 224-231.	1.3	0
85	Pregnancy, pre-eclampsia and vitamin D: a multi-scale mathematical approach. Endocrine Abstracts, 0, , .	0.0	0