Nicolas P Smith

List of Publications by Year
in descending order

64	2,337	172207 29	223531 46
papers	citations	h-index	g-index

64	64	64	2305
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	It's clearly the heart! Optical transparency, cardiac tissue imaging, and computer modelling. Progress in Biophysics and Molecular Biology, 2021, 168, 18-18.	1.4	6
2	Reconstruction of coronary circulation networks: A review of methods. Microcirculation, 2019, 26, e12542.	1.0	8
3	Decreasing Compensatory Ability of Concentric Ventricular Hypertrophy in Aortic-Banded Rat Hearts. Frontiers in Physiology, 2018, 9, 37.	1.3	4
4	Beyond Bernoulli. Circulation: Cardiovascular Imaging, 2017, 10, .	1.3	60
5	A model of cardiac contraction based on novel measurements of tension development in human cardiomyocytes. Journal of Molecular and Cellular Cardiology, 2017, 106, 68-83.	0.9	94
6	Compensatory and decompensatory alterations in cardiomyocyte Ca²⁺ dynamics in hearts with diastolic dysfunction following aortic banding. Journal of Physiology, 2017, 595, 3867-3889.	1.3	11
7	Non-invasive Model-Based Assessment of Passive Left-Ventricular Myocardial Stiffness in Healthy Subjects and in Patients with Non-ischemic Dilated Cardiomyopathy. Annals of Biomedical Engineering, 2017, 45, 605-618.	1.3	33
8	The calciumâ€“frequency response in the rat ventricular myocyte: an experimental and modelling study. Journal of Physiology, 2016, 594, 4193-4224.	1.3	35
9	The Cardiac Physiome Project. Journal of Physiology, 2016, 594, 6815-6816.	1.3	10
10	Analysis of lead placement optimization metrics in cardiac resynchronization therapy with computational modelling. Europace, 2016, 18, iv113-iv120.	0.7	7
11	Impact of coronary bifurcation morphology on wave propagation. American Journal of Physiology - Heart and Circulatory Physiology, 2016, 311, H855-H870.	1.5	5
12	In silico coronary wave intensity analysis: application of an integrated one-dimensional and poromechanical model of cardiac perfusion. Biomechanics and Modeling in Mechanobiology, 2016, 15, 1535-1555.	1.4	21
13	The relative role of patient physiology and device optimisation in cardiac resynchronisation therapy: A computational modelling study. Journal of Molecular and Cellular Cardiology, 2016, 96, 93-100.	0.9	38
14	Is computational modeling adding value for understanding the Heart?. Journal of Molecular and Cellular Cardiology, 2016, 96, 1.	0.9	2
15	Heterogeneous mechanics of the mouse pulmonary arterial network. Biomechanics and Modeling in Mechanobiology, 2016, 15, 1245-1261.	1.4	11
16	Estimation of passive and active properties in the human heart using 3D tagged MRI. Biomechanics and Modeling in Mechanobiology, 2016, 15, 1121-1139.	1.4	55
17	Investigating a Novel Activation-Repolarisation Time Metric to Predict Localised Vulnerability to Reentry Using Computational Modelling. PLoS ONE, 2016, 11, e0149342.	1.1	30
18	Verification of cardiac mechanics software: benchmark problems and solutions for testing active and passive material behaviour. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150641.	1.0	80

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19	Towards causally cohesive genotypeâ€“phenotype modelling for characterization of the soft-tissue mechanics of the heart in normal and pathological geometries. Journal of the Royal Society Interface, 2015, 12, 20141166.	1.5	2
20	Measurement and modeling ofÂcoronary blood flow. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2015, 7, 335-356.	6.6	14
21	Microsphere skimming in the porcine coronary arteries: Implications for flow quantification. Microvascular Research, 2015, 100, 59-70.	1.1	9
22	Factors determining the magnitude of the pre-ejection leftward septal motion in left bundle branch block. Europace, 2015, 18, euv381.	0.7	15
23	Analysis of passive cardiac constitutive laws for parameter estimation using 3D tagged MRI. Biomechanics and Modeling in Mechanobiology, 2015, 14, 807-828.	1.4	47
24	Structureâ€Based Algorithms for Microvessel Classification. Microcirculation, 2015, 22, 99-108.	1.0	14
25	Non-invasive pressure difference estimation from PC-MRI using the work-energy equation. Medical Image Analysis, 2015, 26, 159-172.	7.0	53
26	Quantitative assessment of magnetic resonance derived myocardial perfusion measurements using advanced techniques: microsphere validation in an explanted pig heart system. Journal of Cardiovascular Magnetic Resonance, 2014, 16, 82.	1.6	23
27	Catheter-Induced Errors in Pressure Measurements in Vessels: An In-Vitro and Numerical Study. IEEE Transactions on Biomedical Engineering, 2014, 61, 1844-1850.	2.5	44
28	Computational modeling of Takotsubo cardiomyopathy: effect of spatially varying Î²-adrenergic stimulation in the rat left ventricle. American Journal of Physiology - Heart and Circulatory Physiology, 2014, 307, H1487-H1496.	1.5	24
29	Aortic relative pressure components derived from fourâ€dimensional flow cardiovascular magnetic resonance. Magnetic Resonance in Medicine, 2014, 72, 1162-1169.	1.9	43
30	Pressure mapping from flow imaging: Enhancing computation of the viscous term through velocity reconstruction in near-wall regions. , 2014, 2014, 5097-100.		5
31	Speciesâ€dependent adaptation of the cardiac Na⁺/K⁺ pump kinetics to the intracellular Na⁺ concentration. Journal of Physiology, 2014, 592, 5355-5371.	1.3	13
32	A displacement-based finite element formulation for incompressible and nearly-incompressible cardiac mechanics. Computer Methods in Applied Mechanics and Engineering, 2014, 274, 213-236.	3.4	31
33	Multi-Scale Parameterisation of a Myocardial Perfusion Model Using Whole-Organ Arterial Networks. Annals of Biomedical Engineering, 2014, 42, 797-811.	1.3	31
34	A computational pipeline for quantification of mouse myocardial stiffness parameters. Computers in Biology and Medicine, 2014, 53, 65-75.	3.9	13
35	Transmural Variation and Anisotropy of Microvascular Flow Conductivity in the Rat Myocardium. Annals of Biomedical Engineering, 2014, 42, 1966-1977.	1.3	16
36	Computational analysis of the importance of flow synchrony for cardiac ventricular assist devices. Computers in Biology and Medicine, 2014, 49, 83-94.	3.9	24

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37	Enhancing coronary Wave Intensity Analysis robustness by high order central finite differences. Artery Research, 2014, 8, 98.	0.3	9
38	Parameterisation of multi-scale continuum perfusion models from discrete vascular networks. Medical and Biological Engineering and Computing, 2013, 51, 557-570.	1.6	28
39	Beta-Adrenergic Stimulation Maintains Cardiac Function in Serca2 Knockout Mice. Biophysical Journal, 2013, 104, 1349-1356.	0.2	17
40	Integrating multi-scale data to create a virtual physiological mouse heart. Interface Focus, 2013, 3, 20120076.	1.5	10
41	Modelling Parameter Role on Accuracy of Cardiac Perfusion Quantification. Lecture Notes in Computer Science, 2013, , 370-382.	1.0	3
42	Estimation of Blood Flow Rates in Large Microvascular Networks. Microcirculation, 2012, 19, 530-538.	1.0	50
43	The Multi-Scale Modelling of Coronary Blood Flow. Annals of Biomedical Engineering, 2012, 40, 2399-2413.	1.3	73
44	Efficient Computational Methods for Strongly Coupled Cardiac Electromechanics. IEEE Transactions on Biomedical Engineering, 2012, 59, 1219-1228.	2.5	51
45	An analysis of deformationâ€dependent electromechanical coupling in the mouse heart. Journal of Physiology, 2012, 590, 4553-4569.	1.3	73
46	Simulating Human Cardiac Electrophysiology on Clinical Time-Scales. Frontiers in Physiology, 2011, 2, 14.	1.3	105
47	Theoretical models for coronary vascular biomechanics: Progress & challenges. Progress in Biophysics and Molecular Biology, 2011, 104, 49-76.	1.4	62
48	Length-dependent tension in the failing heart and the efficacy of cardiac resynchronization therapy. Cardiovascular Research, 2011, 89, 336-343.	1.8	133
49	Coupling contraction, excitation, ventricular and coronary blood flow across scale and physics in the heart. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 2311-2331.	1.6	45
50	Theoretical Modeling in Hemodynamics of Microcirculation. Microcirculation, 2008, 15, 699-714.	1.0	28
51	An improved numerical method for strong coupling of excitation and contraction models in the heart. Progress in Biophysics and Molecular Biology, 2008, 96, 90-111.	1.4	98
52	Computational biology of cardiac myocytes: proposed standards for the physiome. Journal of Experimental Biology, 2007, 210, 1576-1583.	0.8	45
53	Automatic segmentation of 3D micro-CT coronary vascular images. Medical Image Analysis, 2007, 11, 630-647.	7.0	82
54	Computational Modeling of Ventricular Mechanics and Energetics. Applied Mechanics Reviews, 2005, 58, 77-90.	4.5	9

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55	Integration from proteins to organs: the IUPS Physiome Project. Mechanisms of Ageing and Development, 2005, 126, 187-192.	2.2	63
56	New developments in a strongly coupled cardiac electromechanical model. Europace, 2005, 7, S118-S127.	0.7	80
57	A computational study of the interaction between coronary blood flow and myocardial mechanics. Physiological Measurement, 2004, 25, 863-877.	1.2	47
58	Computational physiology and the physiome project. Experimental Physiology, 2004, 89, 1-26.	0.9	195
59	Multi-scale modelling and the IUPS physiome project. Journal of Molecular Histology, 2004, 35, 707-714.	1.0	32
60	Giving Form to the Function of the Heart: Embedding Cellular Models in an Anatomical Framework. The Japanese Journal of Physiology, 2004, 54, 541-544.	0.9	2
61	Cardiac electrical activity-from heart to body surface and back again. Journal of Electrocardiology, 2003, 36, 63-67.	0.4	12
62	From sarcomere to cell: an efficient algorithm for linking mathematical models of muscle contraction. Bulletin of Mathematical Biology, 2003, 65, 1141-1162.	0.9	13
63	Altered T Wave Dynamics in a Contracting Cardiac Model. Journal of Cardiovascular Electrophysiology, 2003, 14, S203-S209.	0.8	40
64	NEW DEVELOPMENTS IN AN ANATOMICAL FRAMEWORK FOR MODELING CARDIAC ISCHEMIA. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2003, 13, 3717-3722.	0.7	1