Stephen J Payne

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.

136 papers	1,871 citations	22 h-index	36 g-index
160 ext. papers	2,317 ext. citations	3.2 avg, IF	5.18 L-index

#	Paper	IF	Citations
136	Lung simulation to support non-invasive pulmonary blood flow measurement in Acute Respiratory Distress Syndrome in animals. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2021**, 2021, 76-79	0.9	
135	Coupling one-dimensional arterial blood flow to three-dimensional tissue perfusion models for trials of acute ischaemic stroke. *Interface Focus*, **2021**, 11, 20190125	3.9	14
134	A porous circulation model of the human brain for clinical trials in ischaemic stroke. *Interface Focus*, **2021**, 11, 20190127	3.9	16
133	Modelling the impact of clot fragmentation on the microcirculation after thrombectomy. *PLoS Computational Biology*, **2021**, 17, e1008515	5	5
132	Investigating the role of pericytes in cerebral autoregulation: a modeling study. *Physiological Measurement*, **2021**, 42,	2.9	1
131	Simulation-based optimisation to quantify heterogeneity of specific ventilation and perfusion in the lung by the Inspired Sinewave Test. *Scientific Reports*, **2021**, 11, 12627	4.9	1
130	Validating the Inspired Sinewave Technique to Measure Lung Heterogeneity Compared to Atelectasis & Over-Distended Volume in Computed Tomography Images **2021**,		1
129	On the Sensitivity Analysis of Porous Finite Element Models for Cerebral Perfusion Estimation. *Annals of Biomedical Engineering*, **2021**, 1	4.7	2
128	Two-Way Coupling Between 1D Blood Flow and 3D Tissue Perfusion Models. *Lecture Notes in Computer Science*, **2021**, 670-683	0.9	1
127	The INfoMATAS project: Methods for assessing cerebral autoregulation in stroke. *Journal of Cerebral Blood Flow and Metabolism*, **2021**, 271678X211029049	7.3	3
126	The Ageing Brain: Investigating the Role of Age in Changes to the Human Cerebral Microvasculature With an Model. *Frontiers in Aging Neuroscience*, **2021**, 13, 632521	5.3	0
125	A multiscale model of cerebral autoregulation. *Medical Engineering and Physics*, **2021**, 95, 51-63	2.4	1
124	Mathematical modelling of haemorrhagic transformation after ischaemic stroke. *Journal of Theoretical Biology*, **2021**, 531, 110920	2.3	0
123	In silico trials for treatment of acute ischemic stroke: Design and implementation. *Computers in Biology and Medicine*, **2021**, 137, 104802	7	0
122	Modelling the effects of cerebral microthrombi on tissue oxygenation and cell death. *Journal of Biomechanics*, **2021**, 127, 110705	2.9	2
121	INFOMATAS multi-center systematic review and meta-analysis individual patient data of dynamic cerebral autoregulation in ischemic stroke. *International Journal of Stroke*, **2020**, 15, 807-812	6.3	7
120	Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability?. *PLoS ONE*, **2020**, 15, e0227651	3.7	8

119	Reliability, reproducibility and validity of dynamic cerebral autoregulation in a large cohort with transient ischaemic attack or minor stroke. *Physiological Measurement*, **2020**, 41, 095002	2.9	8
118	Lung heterogeneity and deadspace volume in animals with acute respiratory distress syndrome using the inspired sinewave test. *Physiological Measurement*, **2020**, 41,	2.9	3
117	Searching for the stimulus controlling brain oxygen supply. *Journal of Physiology*, **2020**, 598, 617-618	3.9	1
116	Validation of a Web-Based Planning Tool for Percutaneous Cryoablation of Renal Tumors. *CardioVascular and Interventional Radiology*, **2020**, 43, 1661-1670	2.7	2
115	A tidal lung simulation to quantify lung heterogeneity with the Inspired Sinewave Test. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2020**, 2020, 2438-2441	0.9	4
114	Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651		
113	Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651		
112	Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651		
111	Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651		
110	Dynamic Changes in Microvascular Flow Conductivity and Perfusion After Myocardial Infarction Shown by Image-Based Modeling. *Journal of the American Heart Association*, **2019**, 8, e011058	6	7
109	Dynamic Cerebral Autoregulation Reproducibility Is Affected by Physiological Variability. *Frontiers in Physiology*, **2019**, 10, 865	4.6	17
108	Thrombus growth modelling and stenosis prediction in the cerebral microvasculature. *Journal of Theoretical Biology*, **2019**, 478, 1-13	2.3	
107	Autoregulating Cerebral Tissue Selfishly Exploits Collateral Flow Routes Through the Circle of Willis. *Acta Neurochirurgica Supplementum*, **2018**, 126, 275-279	1.7	1
106	Investigating the effects of a penetrating vessel occlusion with a multi-scale microvasculature model of the human cerebral cortex. *NeuroImage*, **2018**, 172, 94-106	7.9	21
105	Bayesian Inference in Non-Markovian State-Space Models With Applications to Battery Fractional-Order Systems. *IEEE Transactions on Control Systems Technology*, **2018**, 26, 497-506	4.8	9
104	A thermoelastic deformation model of tissue contraction during thermal ablation. *International Journal of Hyperthermia*, **2018**, 34, 221-228	3.7	10
103	Identifying the myogenic and metabolic components of cerebral autoregulation. *Medical Engineering and Physics*, **2018**,	2.4	3
102	Modelling dynamic changes in blood flow and volume in the cerebral vasculature. *NeuroImage*, **2018**, 176, 124-137	7.9	5

101	A model for the optimization of anti-inflammatory treatment with chemerin. *Interface Focus*, **2018**, 8, 20170007	3.9	12
100	Oxygen delivery from the cerebral microvasculature to tissue is governed by a single time constant of approximately 6 seconds. *Microcirculation*, **2018**, 25, e12428	2.9	8
99	Effects of Brain Tissue Mechanical and Fluid Transport Properties during Ischaemic Brain Oedema: A Poroelastic Finite Element Analysis **2018**,		2
98	Reproducibility of dynamic cerebral autoregulation parameters: a multi-centre, multi-method study. *Physiological Measurement*, **2018**, 39, 125002	2.9	19
97	The study of the function of AQP4 in cerebral ischaemia-reperfusion injury using poroelastic theory. *International Journal for Numerical Methods in Biomedical Engineering*, **2017**, 33, e02784	2.6	5
96	. *IEEE Transactions on Control Systems Technology*, **2017**, 25, 2112-2120	4.8	20
95	Monitoring fetal maturation-objectives, techniques and indices of autonomic function. *Physiological Measurement*, **2017**, 38, R61-R88	2.9	29
94	A model for generating synthetic arterial blood pressure. *Physiological Measurement*, **2017**, 38, 477-488	2.9	1
93	A purpose-built neck coil for black-blood DANTE-prepared carotid artery imaging at 7T. *Magnetic Resonance Imaging*, **2017**, 40, 53-61	3.3	5
92	Optimizing image registration and infarct definition in stroke research. *Annals of Clinical and Translational Neurology*, **2017**, 4, 166-174	5.3	15
91	Modelling mixing within the dead space of the lung improves predictions of functional residual capacity. *Respiratory Physiology and Neurobiology*, **2017**, 242, 12-18	2.8	5
90	Doppler-based fetal heart rate analysis markers for the detection of early intrauterine growth restriction. *Acta Obstetricia Et Gynecologica Scandinavica*, **2017**, 96, 1322-1329	3.8	11
89	Increased blood pressure variability upon standing up improves reproducibility of cerebral autoregulation indices. *Medical Engineering and Physics*, **2017**, 47, 151-158	2.4	15
88	Effects of non-physiological blood pressure artefacts on cerebral autoregulation. *Medical Engineering and Physics*, **2017**, 47, 218-221	2.4	4
87	At what data length do cerebral autoregulation measures stabilise?. *Physiological Measurement*, **2017**, 38, 1396-1404	2.9	9
86	The Dual Role of Cerebral Autoregulation and Collateral Flow in the Circle of Willis After Major Vessel Occlusion. *IEEE Transactions on Biomedical Engineering*, **2017**, 64, 1793-1802	5	14
85	Mathematical model of the post-ablation enhancement zone as a tissue-level oedematic response. *International Journal of Hyperthermia*, **2017**, 33, 111-121	3.7	2
84	A mathematical model of cellular swelling in Neuromyelitis optica. *Journal of Theoretical Biology*, **2017**, 433, 39-48	2.3	3

83	Cerebral Blood Flow and Metabolism **2017**,		14
82	A model of tissue contraction during thermal ablation. *Physiological Measurement*, **2016**, 37, 1474-84	2.9	12
81	Modelling the effects of cerebral microvasculature morphology on oxygen transport. *Medical Engineering and Physics*, **2016**, 38, 41-7	2.4	15
80	The Action Potential. *Biosystems and Biorobotics*, **2016**, 33-41	0.2	2
79	Continuous positive airway pressure might not solve your cerebral autoregulation problem if you have obstructive sleep apnoea. *Journal of Physiology*, **2016**, 594, 6803	3.9	1
78	A statistical model of the penetrating arterioles and venules in the human cerebral cortex. *Microcirculation*, **2016**, 23, 580-590	2.9	13
77	Comparison of three artificial models of the magnetohydrodynamic effect on the electrocardiogram. *Computer Methods in Biomechanics and Biomedical Engineering*, **2015**, 18, 1400-17	2.1	7
76	Mathematical model of the effect of ischemia-reperfusion on brain capillary collapse and tissue swelling. *Mathematical Biosciences*, **2015**, 263, 111-20	3.9	18
75	Identifying the ischaemic penumbra using pH-weighted magnetic resonance imaging. *Brain*, **2015**, 138, 36-42	11.2	102
74	Go-Smart: Web-based computational modeling of minimally invasive cancer treatments **2015**,		2
73	Multi-scale homogenization of blood flow in 3-dimensional human cerebral microvascular networks. *Journal of Theoretical Biology*, **2015**, 380, 40-7	2.3	31
72	Cell death, perfusion and electrical parameters are critical in models of hepatic radiofrequency ablation. *International Journal of Hyperthermia*, **2015**, 31, 538-50	3.7	74
71	Modeling the residue function in DSC-MRI simulations: analytical approximation to in vivo data. *Magnetic Resonance in Medicine*, **2014**, 72, 1486-91	4.4	5
70	Modeling and correction of bolus dispersion effects in dynamic susceptibility contrast MRI. *Magnetic Resonance in Medicine*, **2014**, 72, 1762-74	4.4	13
69	High-resolution contrast enhanced multi-phase hepatic Computed Tomography data fromaporcine Radio-Frequency Ablation study **2014**,		3
68	A mathematical framework for minimally invasive tumor ablation therapies. *Critical Reviews in Biomedical Engineering*, **2014**, 42, 383-417	1.1	30
67	Comparing different analysis methods for quantifying the MRI amide proton transfer (APT) effect in hyperacute stroke patients. *NMR in Biomedicine*, **2014**, 27, 1019-29	4.4	66
66	Phase-rectified signal averaging for intrapartum electronic fetal heart rate monitoring is related to acidaemia at birth. *BJOG: an International Journal of Obstetrics and Gynaecology*, **2014**, 121, 889-94	3.7	43

65	Quantification of amide proton transfer effect pre- and post-gadolinium contrast agent administration. *Journal of Magnetic Resonance Imaging*, **2014**, 40, 832-8	5.6	19
64	AuthorsTreply: Computerised interpretation of fetal heart rate patterns and correlation with fetal acidaemia. *BJOG: an International Journal of Obstetrics and Gynaecology*, **2014**, 121, 1747-8	3.7	
63	Feature selection using genetic algorithms for fetal heart rate analysis. *Physiological Measurement*, **2014**, 35, 1357-71	2.9	25
62	A mathematical model of cellular metabolism during ischemic stroke and hypothermia. *IEEE Transactions on Biomedical Engineering*, **2014**, 61, 484-90	5	3
61	Between-centre variability in transfer function analysis, a widely used method for linear quantification of the dynamic pressure-flow relation: the CARNet study. *Medical Engineering and Physics*, **2014**, 36, 620-7	2.4	42
60	An Introduction to Brain Tumor Imaging. *Tumors of the Central Nervous System*, **2014**, 3-20		1
59	Modeling dispersion in arterial spin labeling: validation using dynamic angiographic measurements. *Magnetic Resonance in Medicine*, **2013**, 69, 563-70	4.4	33
58	Comparing model-based and model-free analysis methods for QUASAR arterial spin labeling perfusion quantification. *Magnetic Resonance in Medicine*, **2013**, 69, 1466-75	4.4	13
57	The effects of respiratory CO2 fluctuations in the resting-state BOLD signal differ between eyes open and eyes closed. *Magnetic Resonance Imaging*, **2013**, 31, 336-45	3.3	18
56	Feature selection for computerized fetal heart rate analysis using genetic algorithms. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2013**, 2013, 445-8	0.9	4
55	A generalized mathematical framework for estimating the residue function for arbitrary vascular networks. *Interface Focus*, **2013**, 3, 20120078	3.9	16
54	Artificial neural networks applied to fetal monitoring in labour. *Neural Computing and Applications*, **2013**, 22, 85-93	4.8	49
53	A control point interpolation method for the non-parametric quantification of cerebral haemodynamics from dynamic susceptibility contrast MRI. *NeuroImage*, **2013**, 64, 560-70	7.9	15
52	Quantitative Bayesian model-based analysis of amide proton transfer MRI. *Magnetic Resonance in Medicine*, **2013**, 70, 556-67	4.4	42
51	Optimal sampling schedule for chemical exchange saturation transfer. *Magnetic Resonance in Medicine*, **2013**, 70, 1251-62	4.4	17
50	Vasomotion does inhibit mass exchange between axisymmetric blood vessels and tissue. *Journal of Theoretical Biology*, **2012**, 302, 1-5	2.3	3
49	A fast analysis method for non-invasive imaging of blood flow in individual cerebral arteries using vessel-encoded arterial spin labelling angiography. *Medical Image Analysis*, **2012**, 16, 831-9	15.4	22
48	Evaluating the use of a continuous approximation for model-based quantification of pulsed chemical exchange saturation transfer (CEST). *Journal of Magnetic Resonance*, **2012**, 222, 88-95	3	20

47	Relation of fetal heart rate signals with unassignable baseline to poor neonatal state at birth. *Medical and Biological Engineering and Computing*, **2012**, 50, 717-25	3.1	9
46	The effect of temperature and viscoelasticity on cavitation dynamics during ultrasonic ablation. *Journal of the Acoustical Society of America*, **2011**, 130, 3458-66	2.2	20
45	Effects of arterial blood gas levels on cerebral blood flow and oxygen transport. *Biomedical Optics Express*, **2011**, 2, 966	3.5	15
44	A three-state mathematical model of hyperthermic cell death. *Annals of Biomedical Engineering*, **2011**, 39, 570-9	4.7	44
43	Computerized intrapartum electronic fetal monitoring: analysis of the decision to deliver for fetal distress. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 5888-91	0.9	4
42	A two-equation coupled system for determination of liver tissue temperature during thermal ablation. *International Journal of Heat and Mass Transfer*, **2011**, 54, 2100-2109	4.9	28
41	Modelling of pH dynamics in brain cells after stroke. *Interface Focus*, **2011**, 1, 408-16	3.9	35
40	Computerized fetal heart rate analysis in labor: detection of intervals with un-assignable baseline. *Physiological Measurement*, **2011**, 32, 1549-60	2.9	18
39	The response of hepatocyte cell volume to hyperthermia and its role in oedema. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2011**, 2011, 4305-8	0.9	
38	Effect of temperature on rectified diffusion during ultrasound-induced heating. *Journal of the Acoustical Society of America*, **2011**, 130, 3450-7	2.2	3
37	Effects of arterial blood gas levels on cerebral blood flow and oxygen transport. *Biomedical Optics Express*, **2011**, 2, 966-79	3.5	10
36	Modelling the effects of cardiac pulsations in arterial spin labelling. *Physics in Medicine and Biology*, **2010**, 55, 799-816	3.8	5
35	Dynamics of gas bubbles in time-variant temperature fields. *Journal of Fluid Mechanics*, **2010**, 663, 209-232	3.7	8
34	Automated Fetal Heart Rate Analysis in Labor: Decelerations and Overshoots **2010**,		5
33	Mathematical modeling of thermal ablation. *Critical Reviews in Biomedical Engineering*, **2010**, 38, 21-30	1.1	12
32	Wavelet phase synchronization analysis of cerebral blood flow autoregulation. *IEEE Transactions on Biomedical Engineering*, **2010**, 57, 960-8	5	40
31	A three-state non-linear model of vascular Nitric Oxide transport. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 4917-20	0.9	
30	A two-equation coupled system model for determination of liver tissue temperature during radio frequency ablation. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 3893-6	0.9	4

29	A two phase model of oxygen transport in cerebral tissue. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 4921-4	0.9	5
28	The effects of non-linearities on shear stress in periodic flow in axi-symmetric vessels. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 3944-7	0.9	
27	1-D steady state analysis of a two-equation coupled system for determination of tissue temperature in liver during radio frequency ablation. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 3385-8	0.9	
26	Modeling the effects of flow dispersion in arterial spin labeling. *IEEE Transactions on Biomedical Engineering*, **2009**, 56, 1635-43	5	15
25	Effects of autoregulation and CO2 reactivity on cerebral oxygen transport. *Annals of Biomedical Engineering*, **2009**, 37, 2288-98	4.7	19
24	Computerised electronic foetal heart rate monitoring in labour: automated contraction identification. *Medical and Biological Engineering and Computing*, **2009**, 47, 1315-20	3.1	7
23	Comment on "Estimating a modified Grubb's exponent in healthy human brains with near infrared spectroscopy and transcranial Doppler". *Physiological Measurement*, **2009**, 30, L9-L11; author reply L13-L14	2.9	6
22	The effects of age on the spontaneous low-frequency oscillations in cerebral and systemic cardiovascular dynamics. *Physiological Measurement*, **2008**, 29, 1055-69	2.9	48
21	Multivariate system identification for cerebral autoregulation. *Annals of Biomedical Engineering*, **2008**, 36, 308-20	4.7	44
20	Modeling the detachment and transport of bubbles from nucleation sites in small vessels. *IEEE Transactions on Biomedical Engineering*, **2007**, 54, 2106-8	5	2
19	The effect of cavity geometry on the nucleation of bubbles from cavities. *Journal of the Acoustical Society of America*, **2007**, 121, 853-62	2.2	22
18	High-Frequency Effects in the Aspirating Probe. *Journal of Turbomachinery*, **2007**, 129, 842-851	1.8	
17	Synchronization between arterial blood pressure and cerebral oxyhaemoglobin concentration investigated by wavelet cross-correlation. *Physiological Measurement*, **2007**, 28, 161-73	2.9	118
16	METHODS IN THE ANALYSIS OF THE EFFECTS OF GRAVITY AND WALL PROPERTIES IN BLOOD FLOW THROUGH VASCULAR SYSTEMS **2007**, 207-232		
15	A physiological model of the interaction between tissue bubbles and the formation of blood-borne bubbles under decompression. *Physics in Medicine and Biology*, **2006**, 51, 2321-38	3.8	8
14	Modeling the cycles of growth and detachment of bubbles in carbonated beverages. *Journal of Physical Chemistry B*, **2006**, 110, 7579-86	3.4	23
13	A model of the interaction between autoregulation and neural activation in the brain. *Mathematical Biosciences*, **2006**, 204, 260-81	3.9	49
12	A physiological model of gas pockets in crevices and their behavior under compression. *Respiratory Physiology and Neurobiology*, **2006**, 152, 100-14	2.8	12

11	A physiological model of the release of gas bubbles from crevices under decompression. *Respiratory Physiology and Neurobiology*, **2006**, 153, 166-80	2.8	24
10	Combined transfer function analysis and modelling of cerebral autoregulation. *Annals of Biomedical Engineering*, **2006**, 34, 847-58	4.7	19
9	Unsteady loss in a high pressure turbine stage: Interaction effects. *International Journal of Heat and Fluid Flow*, **2005**, 26, 695-708	2.4	5
8	A method for the automated detection of venous gas bubbles in humans using empirical mode decomposition. *Annals of Biomedical Engineering*, **2005**, 33, 1411-21	4.7	13
7	Automated classification and analysis of the calcium response of single T lymphocytes using a neural network approach. *IEEE Transactions on Neural Networks*, **2005**, 16, 949-58		10
6	Automated determination of bubble grades from Doppler ultrasound recordings. *Aviation, Space, and Environmental Medicine*, **2005**, 76, 771-7		3
5	Analysis of the effects of gravity and wall thickness in a model of blood flow through axisymmetric vessels. *Medical and Biological Engineering and Computing*, **2004**, 42, 799-806	3.1	12
4	A two-layer model of the static behaviour of blood vessel walls. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2004**, 2004, 3692-5		1
3	Unsteady loss in a high pressure turbine stage. *International Journal of Heat and Fluid Flow*, **2003**, 24, 698-708	2.4	15
2	Modelling the impact of clot fragmentation on the microcirculation after thrombectomy		1
1	Modelling the effects of cerebral microthrombi on tissue oxygenation and cell death		2