Markus R Owen

List of Publications by Year
in descending order

75 papers	4,089 citations	117625 34 h-index	118850 62 g-index
82 all docs	82 docs citations	82 times ranked	4515 citing authors

#	Article	IF	Citations
1	Root gravitropism is regulated by a transient lateral auxin gradient controlled by a tipping-point mechanism. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4668-4673.	7.1	304
2	Modelling aspects of cancer dynamics: a review. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 1563-1578.	3.4	211
3	Root hydrotropism is controlled via a cortex-specific growth mechanism. Nature Plants, 2017, 3, 17057.	9.3	183
4	Angiogenesis and vascular remodelling in normal and cancerous tissues. Journal of Mathematical Biology, 2009, 58, 689-721.	1.9	178
5	How Predation can Slow, Stop or Reverse a Prey Invasion. Bulletin of Mathematical Biology, 2001, 63, 655-684.	1.9	164
6	O<scp>pen</scp>S<scp>im</scp>R<scp>oot</scp>: widening the scope and application of root architectural models. New Phytologist, 2017, 215, 1274-1286.	7.3	158
7	Multiscale Modelling of Vascular Tumour Growth in 3D: The Roles of Domain Size and Boundary Conditions. PLoS ONE, 2011, 6, e14790.	2.5	150
8	Waves and bumps in neuronal networks with axo-dendritic synaptic interactions. Physica D: Nonlinear Phenomena, 2003, 178, 219-241.	2.8	142
9	Mathematical modelling of the use of macrophages as vehicles for drug delivery to hypoxic tumour sites. Journal of Theoretical Biology, 2004, 226, 377-391.	1.7	132
10	Evans Functions for Integral Neural Field Equations with Heaviside Firing Rate Function. SIAM Journal on Applied Dynamical Systems, 2004, 3, 574-600.	1.6	129
11	Mathematical modeling elucidates the role of transcriptional feedback in gibberellin signaling. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7571-7576.	7.1	119
12	Dynamic regulation of auxin oxidase and conjugating enzymes <i>AtDAO1</i> and <i>GH3</i> modulates auxin homeostasis. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11022-11027.	7.1	119
13	Sequential induction of auxin efflux and influx carriers regulates lateral root emergence. Molecular Systems Biology, 2013, 9, 699.	7.2	104
14	Bumps, Breathers, and Waves in a Neural Network with Spike Frequency Adaptation. Physical Review Letters, 2005, 94, 148102.	7.8	99
15	Growth-induced hormone dilution can explain the dynamics of plant root cell elongation. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7577-7582.	7.1	95
16	Pattern Formation and Spatiotemporal Irregularity in a Model for Macrophageâ€“Tumour Interactions. Journal of Theoretical Biology, 1997, 189, 63-80.	1.7	93
17	Modeling sharp waveâ€ripple complexes through a CA3â€CA1 network model with chemical synapses. Hippocampus, 2012, 22, 995-1017.	1.9	90
18	Bumps and rings in a two-dimensional neural field: splitting and rotational instabilities. New Journal of Physics, 2007, 9, 378-378.	2.9	86

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19	Mathematical Modeling Predicts Synergistic Antitumor Effects of Combining a Macrophage-Based, Hypoxia-Targeted Gene Therapy with Chemotherapy. Cancer Research, 2011, 71, 2826-2837.	0.9	84
20	Modelling the macrophage invasion of tumours: Effects on growth and composition. Mathematical Medicine and Biology, 1998, 15, 165-185.	1.2	76
21	STAT1-cooperative DNA binding distinguishes type 1 from type 2 interferon signaling. Nature Immunology, 2014, 15, 168-176.	14.5	75
22	Multiscale Modelling of Tumour Growth and Therapy: The Influence of Vessel Normalisation on Chemotherapy. Computational and Mathematical Methods in Medicine, 2006, 7, 85-119.	1.3	71
23	Mathematical modelling of juxtacrine cell signalling. Mathematical Biosciences, 1998, 153, 125-150.	1.9	65
24	MATHEMATICAL MODELLING OF MACROPHAGE DYNAMICS IN TUMOURS. Mathematical Models and Methods in Applied Sciences, 1999, 09, 513-539.	3.3	64
25	Lateral Induction by Juxtacrine Signaling Is a New Mechanism for Pattern Formation. Developmental Biology, 2000, 217, 54-61.	2.0	64
26	Oscillations and patterns in spatially discrete models for developmental intercellular signalling. Journal of Mathematical Biology, 2004, 48, 444-476.	1.9	61
27	Mathematical Modelling of Juxtacrine Patterning. Bulletin of Mathematical Biology, 2000, 62, 293-320.	1.9	59
28	Comparing Stochastic Differential Equations and Agent-Based Modelling and Simulation for Early-Stage Cancer. PLoS ONE, 2014, 9, e95150.	2.5	57
29	Mathematical Modelling of the Aux/IAA Negative Feedback Loop. Bulletin of Mathematical Biology, 2010, 72, 1383-1407.	1.9	56
30	MODELLING THE RESPONSE OF VASCULAR TUMOURS TO CHEMOTHERAPY: A MULTISCALE APPROACH. Mathematical Models and Methods in Applied Sciences, 2006, 16, 1219-1241.	3.3	52
31	A new interpretation of the Keller-Segel model based on multiphase modelling. Journal of Mathematical Biology, 2004, 49, 604-626.	1.9	45
32	Modelling the Role of Angiogenesis and Vasculogenesis in Solid Tumour Growth. Bulletin of Mathematical Biology, 2007, 69, 2737-2772.	1.9	40
33	How far can a juxtacrine signal travel?. Proceedings of the Royal Society B: Biological Sciences, 1999, 266, 579-585.	2.6	37
34	Mode locking in a periodically forced integrate-and-fire-or-burst neuron model. Physical Review E, 2001, 64, 041914.	2.1	37
35	Macrophage-Based Anti-Cancer Therapy: Modelling Different Modes of Tumour Targeting. Bulletin of Mathematical Biology, 2007, 69, 1747-1776.	1.9	35
36	Mathematical modelling of cytokine-mediated inflammation in rheumatoid arthritis. Mathematical Medicine and Biology, 2013, 30, 311-337.	1.2	33

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37	A simulation model of rhizome networks for Fallopia japonica (Japanese knotweed) in the United Kingdom. Ecological Modelling, 2007, 200, 421-432.	2.5	32
38	Modelling and Analysis of Planar Cell Polarity. Bulletin of Mathematical Biology, 2010, 72, 645-680.	1.9	32
39	Differential biosynthesis and cellular permeability explain longitudinal gibberellin gradients in growing roots. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	32
40	Assessing cortico-hippocampal functional connectivity under anesthesia and kainic acid using generalized partial directed coherence. Biological Cybernetics, 2010, 102, 327-340.	1.3	31
41	Modeling Regulatory Networks to Understand Plant Development: Small Is Beautiful. Plant Cell, 2012, 24, 3876-3891.	6.6	31
42	Influence of slow oscillation on hippocampal activity and ripples through cortico-hippocampal synaptic interactions, analyzed by a cortical-CA3-CA1 network model. Frontiers in Computational Neuroscience, 2013, 7, 3.	2.1	31
43	The impact of cell crowding and active cell movement on vascular tumour growth. Networks and Heterogeneous Media, 2006, 1, 515-535.	1.1	26
44	The Mechanics of Lung Tissue under High-Frequency Ventilation. SIAM Journal on Applied Mathematics, 2001, 61, 1731-1761.	1.8	20
45	Combined microarray analysis uncovers self-renewal related signaling in mouse embryonic stem cells. Systems and Synthetic Biology, 2007, 1, 171-181.	1.0	20
46	On-lattice agent-based simulation of populations of cells within the open-source Chaste framework. Interface Focus, 2013, 3, 20120081.	3.0	20
47	Waves and propagation failure in discrete space models with nonlinear coupling and feedback. Physica D: Nonlinear Phenomena, 2002, 173, 59-76.	2.8	17
48	Mathematical Modeling of Glucose Homeostasis and Its Relationship With Energy Balance and Body Fat. Obesity, 2009, 17, 632-639.	3.0	17
49	Oscillatory dynamics in a model of vascular tumour growth - implications for chemotherapy. Biology Direct, 2010, 5, 27.	4.6	16
50	Intra-membrane ligand diffusion and cell shape modulate juxtacrine patterning. Journal of Theoretical Biology, 2004, 230, 99-117.	1.7	14
51	Sensory gating and its modulation by cannabinoids: electrophysiological, computational and mathematical analysis. Cognitive Neurodynamics, 2008, 2, 159-170.	4.0	14
52	Mathematical modelling of cytokines, MMPs and fibronectin fragments in osteoarthritic cartilage. Journal of Mathematical Biology, 2017, 75, 985-1024.	1.9	13
53	Modelling the coupling between intracellular calcium release and the cell cycle during cortical brain development. Journal of Theoretical Biology, 2014, 347, 17-32.	1.7	11
54	Effect of Loading History on Airway Smooth Muscle Cell-Matrix Adhesions. Biophysical Journal, 2018, 114, 2679-2690.	0.5	11

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55	Is a Persistent Global Bias Necessary for the Establishment of Planar Cell Polarity?. PLoS ONE, 2013, 8, e60064.	2.5	11
56	Mathematical modelling of signalling in a two-ligand G-protein coupled receptor system: Agonistâ€“antagonist competition. Mathematical Biosciences, 2010, 223, 115-132.	1.9	9
57	Agent-based modelling of juvenile eel migration via selective tidal stream transport. Ecological Modelling, 2021, 443, 109448.	2.5	9
58	A mathematical model of the bovine oestrous cycle: Simulating outcomes of dietary and pharmacological interventions. Journal of Theoretical Biology, 2012, 313, 115-126.	1.7	8
59	Speed Switch in Glioblastoma Growth Rate due to Enhanced Hypoxia-Induced Migration. Bulletin of Mathematical Biology, 2020, 82, 43.	1.9	7
60	Spatiotemporal Patterning in Models of Juxtacrine Intercellular Signalling with Feedback. The IMA Volumes in Mathematics and Its Applications, 2001, , 165-192.	0.5	7
61	Identifying the spatial and temporal dynamics of molecularly-distinct glioblastoma sub-populations. Mathematical Biosciences and Engineering, 2020, 17, 4905-4941.	1.9	7
62	The role of cannabinoids in the neurobiology of sensory gating: A firing rate model study. Neurocomputing, 2007, 70, 1902-1906.	5.9	6
63	Damped propagation of cell polarization explains distinct PCP phenotypes of epithelial patterning. Scientific Reports, 2013, 3, 2528.	3.3	6
64	The spatiotemporal order of signaling events unveils the logic of development signaling. Bioinformatics, 2016, 32, 2313-2320.	4.1	6
65	Multiscale Modelling of Solid Tumour Growth. , 2008, , 1-25.		5
66	Mathematical analysis of a model for the growth of the bovine corpus luteum. Journal of Mathematical Biology, 2014, 69, 1515-1546.	1.9	5
67	A Mechanistic Investigation into Ischemia-Driven Distal Recurrence of Glioblastoma. Bulletin of Mathematical Biology, 2020, 82, 143.	1.9	5
68	Modelling cell cycle synchronisation in networks of coupled radial glial cells. Journal of Theoretical Biology, 2015, 377, 85-97.	1.7	4
69	Switching behaviour in vascular smooth muscle cellâ€“matrix adhesion during oscillatory loading. Journal of Theoretical Biology, 2020, 502, 110387.	1.7	4
70	Capturing the Dynamics of a Hybrid Multiscale Cancer Model with a Continuum Model. Bulletin of Mathematical Biology, 2018, 80, 1435-1475.	1.9	1
71	Structural Adaptation in Normal and Cancerous Vasculature. , 2007, , 165-178.		1
72	The Virtual Root: Mathematical Modeling of Auxin Transport in the Arabidopsis Root Tip Using the Open-Source Software SimuPlant. Methods in Molecular Biology, 2022, 2395, 147-164.	0.9	1

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73	Exorcising Malthusian ghosts: Vaccinating the Nexus to advance integrated water, energy and food resource resilience. Current Research in Environmental Sustainability, 2022, 4, 100108.	3.5	1
74	MACROPHAGES AND TUMOURS: FRIENDS OR FOE?. , 2010, , .		0
75	Modelling the emergence of cities andÂurban patterning using coupled integro-differential equations. Journal of the Royal Society Interface, 2022, 19, 20220176.	3.4	0