Rebecca J Shipley

List of Publications by Year
in descending order

64 papers	1,570 citations	304743 22 h-index	330143 37 g-index
69 all docs	69 docs citations	69 times ranked	1980 citing authors

#	Article	IF	Citations
1	Multiscale Modelling of Fluid and Drug Transport inÂVascular Tumours. Bulletin of Mathematical Biology, 2010, 72, 1464-1491.	1.9	127
2	Homogenization via formal multiscale asymptotics and volume averaging: How do the two techniques compare?. Advances in Water Resources, 2013, 62, 178-206.	3.8	123
3	High-speed camera characterization of voluntary eye blinking kinematics. Journal of the Royal Society Interface, 2013, 10, 20130227.	3.4	110
4	Computational fluid dynamics with imaging of cleared tissue and of in vivo perfusion predicts drug uptake and treatment responses in tumours. Nature Biomedical Engineering, 2018, 2, 773-787.	22.5	91
5	Effective governing equations for poroelastic growing media. Quarterly Journal of Mechanics and Applied Mathematics, 2014, 67, 69-91.	1.3	86
6	Vascularization Strategies for Peripheral Nerve Tissue Engineering. Anatomical Record, 2018, 301, 1657-1667.	1.4	70
7	Multiscale Modeling of Fluid Transport in Tumors. Bulletin of Mathematical Biology, 2008, 70, 2334-2357.	1.9	67
8	Theoretical models for coronary vascular biomechanics: Progress & challenges. Progress in Biophysics and Molecular Biology, 2011, 104, 49-76.	2.9	62
9	Design criteria for a printed tissue engineering construct: A mathematical homogenization approach. Journal of Theoretical Biology, 2009, 259, 489-502.	1.7	48
10	A Validated Multiscale In-Silico Model for Mechano-sensitive Tumour Angiogenesis and Growth. PLoS Computational Biology, 2017, 13, e1005259.	3.2	45
11	Mechanical Response of Neural Cells to Physiologically Relevant Stiffness Gradients. Advanced Healthcare Materials, 2020, 9, e1901036.	7.6	41
12	Medical imaging and physiological modelling: linking physics and biology. BioMedical Engineering OnLine, 2009, 8, 1.	2.7	39
13	A strategy to determine operating parameters in tissue engineering hollow fiber bioreactors. Biotechnology and Bioengineering, 2011, 108, 1450-1461.	3.3	37
14	Regulation of O2 consumption by the PI3K and mTOR pathways contributes to tumor hypoxia. Radiotherapy and Oncology, 2014, 111, 72-80.	0.6	37
15	Insights into cerebral haemodynamics and oxygenation utilising in vivo mural cell imaging and mathematical modelling. Scientific Reports, 2018, 8, 1373.	3.3	36
16	Modelling the transport of fluid through heterogeneous, whole tumours in silico. PLoS Computational Biology, 2019, 15, e1006751.	3.2	35
17	Fluid and mass transport modelling to drive the design of cell-packed hollow fibre bioreactors for tissue engineering applications. Mathematical Medicine and Biology, 2012, 29, 329-359.	1.2	29
18	Mathematical and computational models for bone tissue engineering in bioreactor systems. Journal of Tissue Engineering, 2019, 10, 204173141982792.	5.5	29

#	Article	IF	Citations
19	Definition and validation of operating equations for poly(vinyl alcohol)â€poly(lactideâ€coâ€glycolide) microfiltration membraneâ€scaffold bioreactors. Biotechnology and Bioengineering, 2010, 107, 382-392.	3.3	28
20	Novel in vitro and mathematical models for the prediction of chemical toxicity. Toxicology Research, 2013, 2, 40-59.	2.1	25
21	Developing an In Vitro Model to Screen Drugs for Nerve Regeneration. Anatomical Record, 2018, 301, 1628-1637.	1.4	25
22	Selectively Cross-Linked Tetra-PEG Hydrogels Provide Control over Mechanical Strength with Minimal Impact on Diffusivity. ACS Biomaterials Science and Engineering, 2021, 7, 4293-4304.	5.2	25
23	Quantifying the correlation between spatially defined oxygen gradients and cell fate in an engineered three-dimensional culture model. Journal of the Royal Society Interface, 2014, 11, 20140501.	3.4	24
24	Multiphase modelling of the influence of fluid flow and chemical concentration on tissue growth in a hollow fibre membrane bioreactor. Mathematical Medicine and Biology, 2014, 31, 393-430.	1.2	21
25	Combined mathematical modelling and experimentation to predict polymersome uptake by oral cancer cells. Nanomedicine: Nanotechnology, Biology, and Medicine, 2014, 10, 339-348.	3.3	20
26	Hollow Fiber Bioreactors for In Vivo-like Mammalian Tissue Culture. Journal of Visualized Experiments, 2016, , .	0.3	19
27	Optimising Cell Aggregate Expansion in a Perfused Hollow Fibre Bioreactor via Mathematical Modelling. PLoS ONE, 2014, 9, e105813.	2.5	19
28	Microstructure and mechanical properties of synthetic brow-suspension materials. Materials Science and Engineering C, 2014, 35, 220-230.	7.3	17
29	A hybrid discreteâ€“continuum approach for modelling microcirculatory blood flow. Mathematical Medicine and Biology, 2020, 37, 40-57.	1.2	17
30	Transmural Variation and Anisotropy of Microvascular Flow Conductivity in the Rat Myocardium. Annals of Biomedical Engineering, 2014, 42, 1966-1977.	2.5	16
31	An integrated theoretical-experimental approach to accelerate translational tissue engineering. Journal of Tissue Engineering and Regenerative Medicine, 2018, 12, e53-e59.	2.7	16
32	Combining in silico and in vitro models to inform cell seeding strategies in tissue engineering. Journal of the Royal Society Interface, 2020, 17, 20190801.	3.4	15
33	Multiphase modelling of the effect of fluid shear stress on cell yield and distribution in a hollow fibre membrane bioreactor. Biomechanics and Modeling in Mechanobiology, 2015, 14, 387-402.	2.8	14
34	Structureâ€Based Algorithms for Microvessel Classification. Microcirculation, 2015, 22, 99-108.	1.8	14
35	A parameterised mathematical model to elucidate osteoblast cell growth in a phosphate-glass microcarrier culture. Journal of Tissue Engineering, 2019, 10, 204173141983026.	5.5	14
36	The UCL Ventura CPAP device for COVID-19. Lancet Respiratory Medicine,the, 2020, 8, 1076-1078.	10.7	12

#	Article	IF	Citations
37	A fourâ€compartment multiscale model of fluid and drug distribution in vascular tumours. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3315.	2.1	12
38	Mathematical modelling of cell layer growth in a hollow fibre bioreactor. Journal of Theoretical Biology, 2017, 418, 36-56.	1.7	11
39	Assessing behaviour of osteoblastic cells in dynamic culture conditions using titanium-doped phosphate glass microcarriers. Journal of Tissue Engineering, 2019, 10, 204173141982577.	5.5	10
40	Physical and mechanical properties of RAFT-stabilised collagen gels for tissue engineering applications. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 99, 216-224.	3.1	8
41	Multifluorescence Highâ€Resolution Episcopic Microscopy for 3D Imaging of Adult Murine Organs. Advanced Photonics Research, 2021, 2, 2100110.	3.6	8
42	Dispersion-enhanced solute transport in a cell-seeded hollow fibre membrane bioreactor. Journal of Engineering Mathematics, 2016, 99, 29-63.	1.2	5
43	Design considerations for engineering 3D models to study vascular pathologies in vitro. Acta Biomaterialia, 2021, 132, 114-128.	8.3	5
44	Asymmetric Point Spread Function Estimation and Deconvolution for Serial-Sectioning Block-Face Imaging. Communications in Computer and Information Science, 2020, , 235-249.	0.5	5
45	Challenges and opportunities of integrating imaging and mathematical modelling to interrogate biological processes. International Journal of Biochemistry and Cell Biology, 2022, 146, 106195.	2.8	5
46	Theoretical exploration of blastocyst morphogenesis. International Journal of Developmental Biology, 2009, 53, 447-457.	0.6	4
47	Mathematical modelling of a liver hollow fibre bioreactor. Journal of Theoretical Biology, 2019, 475, 25-33.	1.7	4
48	Tapering analysis of airways with bronchiectasis. , 2018, , .		4
49	In silico framework to inform the design of repair constructs for peripheral nerve injury repair. Journal of the Royal Society Interface, 2022, 19, 20210824.	3.4	4
50	Stress-relaxation and fatigue behaviour of synthetic brow-suspension materials. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 42, 116-128.	3.1	3
51	A multiphase model for chemically- and mechanically- induced cell differentiation in a hollow fibre membrane bioreactor: minimising growth factor consumption. Biomechanics and Modeling in Mechanobiology, 2016, 15, 683-700.	2.8	3
52	Lessons and risks of medical device deployment in a global pandemic. The Lancet Global Health, 2021, 9, e395-e396.	6.3	3
53	Modelling-informed cell-seeded nerve repair construct designs for treating peripheral nerve injuries. PLoS Computational Biology, 2021, 17, e1009142.	3.2	3
54	Feasibility of Noninvasive Positive Pressure Ventilation in the Treatment of Oxygen-Dependent COVID-19 Patients in Peru. American Journal of Tropical Medicine and Hygiene, 2021, 105, 727-730.	1.4	3

#	Article	IF	Citations
55	A combined experimental and computational framework to evaluate the behavior of therapeutic cells for peripheral nerve regeneration. Biotechnology and Bioengineering, 2022, 119, 1980-1996.	3.3	3
56	High oxygen flow rates with the UCL Ventura CPAP device â€“ Authors' reply. Lancet Respiratory Medicine,the, 2021, 9, e36.	10.7	2
57	A mathematical investigation into the uptake kinetics of nanoparticles in vitro. PLoS ONE, 2021, 16, e0254208.	2.5	2
58	Insights into the design of spray systems for cell therapies for retinal disease using computational modelling. Mathematical Biosciences and Engineering, 2020, 17, 2741-2759.	1.9	2
59	Clinical Classification of Cold and Warm Shock: Is There a Signal in the Noise?*. Pediatric Critical Care Medicine, 2020, 21, 1085-1087.	0.5	1
60	Reproducibility of an airway tapering measurement in computed tomography with application to bronchiectasis. Journal of Medical Imaging, 2019, 6, 1.	1.5	1
61	Mathematical Modeling for Nerve Repair Research. Reference Series in Biomedical Engineering, 2022, , 189-241.	0.1	1
62	Multi-modal pharmacokinetic modelling for DCE-MRI: using diffusion weighted imaging to constrain the local arterial input function. Proceedings of SPIE, 2014, , .	0.8	0
63	The Mechanics of Brow-Suspension Ptosis Repair: A Comparative Study of Fox Pentagon and Crawford Triangle Techniques. Ophthalmic Plastic and Reconstructive Surgery, 2017, 33, 22-26.	0.8	0
64	Influence of asymptotically-limiting micromechanical properties on the effective behaviour of fibre-supported composite materials. Journal of Engineering Mathematics, 2022, 134, .	1.2	0