

# Rebecca J Shipley

## List of Publications by Year in descending order

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Version: 2024-02-01

64  
papers

1,570  
citations

304368

22  
h-index

329751

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 in Vascular Tumours. <i>Bulletin of Mathematical Biology</i> , 2010, 72, 1464-1491.	0.9	127
2	Homogenization via formal multiscale asymptotics and volume averaging: How do the two techniques compare?. <i>Advances in Water Resources</i> , 2013, 62, 178-206.	1.7	123
3	High-speed camera characterization of voluntary eye blinking kinematics. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20130227.	1.5	110
4	Computational fluid dynamics with imaging of cleared tissue and of in vivo perfusion predicts drug uptake and treatment responses in tumours. <i>Nature Biomedical Engineering</i> , 2018, 2, 773-787.	11.6	91
5	Effective governing equations for poroelastic growing media. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2014, 67, 69-91.	0.5	86
6	Vascularization Strategies for Peripheral Nerve Tissue Engineering. <i>Anatomical Record</i> , 2018, 301, 1657-1667.	0.8	70
7	Multiscale Modeling of Fluid Transport in Tumors. <i>Bulletin of Mathematical Biology</i> , 2008, 70, 2334-2357.	0.9	67
8	Theoretical models for coronary vascular biomechanics: Progress & challenges. <i>Progress in Biophysics and Molecular Biology</i> , 2011, 104, 49-76.	1.4	62
9	Design criteria for a printed tissue engineering construct: A mathematical homogenization approach. <i>Journal of Theoretical Biology</i> , 2009, 259, 489-502.	0.8	48
10	A Validated Multiscale In-Silico Model for Mechano-sensitive Tumour Angiogenesis and Growth. <i>PLoS Computational Biology</i> , 2017, 13, e1005259.	1.5	45
11	Mechanical Response of Neural Cells to Physiologically Relevant Stiffness Gradients. <i>Advanced Healthcare Materials</i> , 2020, 9, e1901036.	3.9	41
12	Medical imaging and physiological modelling: linking physics and biology. <i>BioMedical Engineering OnLine</i> , 2009, 8, 1.	1.3	39
13	A strategy to determine operating parameters in tissue engineering hollow fiber bioreactors. <i>Biotechnology and Bioengineering</i> , 2011, 108, 1450-1461.	1.7	37
14	Regulation of O2 consumption by the PI3K and mTOR pathways contributes to tumor hypoxia. <i>Radiotherapy and Oncology</i> , 2014, 111, 72-80.	0.3	37
15	Insights into cerebral haemodynamics and oxygenation utilising in vivo mural cell imaging and mathematical modelling. <i>Scientific Reports</i> , 2018, 8, 1373.	1.6	36
16	Modelling the transport of fluid through heterogeneous, whole tumours in silico. <i>PLoS Computational Biology</i> , 2019, 15, e1006751.	1.5	35
17	Fluid and mass transport modelling to drive the design of cell-packed hollow fibre bioreactors for tissue engineering applications. <i>Mathematical Medicine and Biology</i> , 2012, 29, 329-359.	0.8	29
18	Mathematical and computational models for bone tissue engineering in bioreactor systems. <i>Journal of Tissue Engineering</i> , 2019, 10, 204173141982792.	2.3	29

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19	Definition and validation of operating equations for poly(vinyl alcohol)-poly(lactide-co-glycolide) microfiltration membrane-scaffold bioreactors. <i>Biotechnology and Bioengineering</i> , 2010, 107, 382-392.	1.7	28
20	Novel in vitro and mathematical models for the prediction of chemical toxicity. <i>Toxicology Research</i> , 2013, 2, 40-59.	0.9	25
21	Developing an <i>In Vitro</i> Model to Screen Drugs for Nerve Regeneration. <i>Anatomical Record</i> , 2018, 301, 1628-1637.	0.8	25
22	Selectively Cross-Linked Tetra-PEG Hydrogels Provide Control over Mechanical Strength with Minimal Impact on Diffusivity. <i>ACS Biomaterials Science and Engineering</i> , 2021, 7, 4293-4304.	2.6	25
23	Quantifying the correlation between spatially defined oxygen gradients and cell fate in an engineered three-dimensional culture model. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140501.	1.5	24
24	Multiphase modelling of the influence of fluid flow and chemical concentration on tissue growth in a hollow fibre membrane bioreactor. <i>Mathematical Medicine and Biology</i> , 2014, 31, 393-430.	0.8	21
25	Combined mathematical modelling and experimentation to predict polymersome uptake by oral cancer cells. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2014, 10, 339-348.	1.7	20
26	Hollow Fiber Bioreactors for <i>In Vivo</i> -like Mammalian Tissue Culture. <i>Journal of Visualized Experiments</i> , 2016, , .	0.2	19
27	Optimising Cell Aggregate Expansion in a Perfused Hollow Fibre Bioreactor via Mathematical Modelling. <i>PLoS ONE</i> , 2014, 9, e105813.	1.1	19
28	Microstructure and mechanical properties of synthetic brow-suspension materials. <i>Materials Science and Engineering C</i> , 2014, 35, 220-230.	3.8	17
29	A hybrid discrete-continuum approach for modelling microcirculatory blood flow. <i>Mathematical Medicine and Biology</i> , 2020, 37, 40-57.	0.8	17
30	Transmural Variation and Anisotropy of Microvascular Flow Conductivity in the Rat Myocardium. <i>Annals of Biomedical Engineering</i> , 2014, 42, 1966-1977.	1.3	16
31	An integrated theoretical-experimental approach to accelerate translational tissue engineering. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2018, 12, e53-e59.	1.3	16
32	Combining in silico and in vitro models to inform cell seeding strategies in tissue engineering. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20190801.	1.5	15
33	Multiphase modelling of the effect of fluid shear stress on cell yield and distribution in a hollow fibre membrane bioreactor. <i>Biomechanics and Modeling in Mechanobiology</i> , 2015, 14, 387-402.	1.4	14
34	Structure-Based Algorithms for Microvessel Classification. <i>Microcirculation</i> , 2015, 22, 99-108.	1.0	14
35	A parameterised mathematical model to elucidate osteoblast cell growth in a phosphate-glass microcarrier culture. <i>Journal of Tissue Engineering</i> , 2019, 10, 204173141983026.	2.3	14
36	The UCL Ventura CPAP device for COVID-19. <i>Lancet Respiratory Medicine</i> , 2020, 8, 1076-1078.	5.2	12

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37	A four-compartment multiscale model of fluid and drug distribution in vascular tumours. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2020, 36, e3315.	1.0	12
38	Mathematical modelling of cell layer growth in a hollow fibre bioreactor. <i>Journal of Theoretical Biology</i> , 2017, 418, 36-56.	0.8	11
39	Assessing behaviour of osteoblastic cells in dynamic culture conditions using titanium-doped phosphate glass microcarriers. <i>Journal of Tissue Engineering</i> , 2019, 10, 204173141982577.	2.3	10
40	Physical and mechanical properties of RAFT-stabilised collagen gels for tissue engineering applications. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2019, 99, 216-224.	1.5	8
41	Multifluorescence High-Resolution Episcopic Microscopy for 3D Imaging of Adult Murine Organs. <i>Advanced Photonics Research</i> , 2021, 2, 2100110.	1.7	8
42	Dispersion-enhanced solute transport in a cell-seeded hollow fibre membrane bioreactor. <i>Journal of Engineering Mathematics</i> , 2016, 99, 29-63.	0.6	5
43	Design considerations for engineering 3D models to study vascular pathologies in vitro. <i>Acta Biomaterialia</i> , 2021, 132, 114-128.	4.1	5
44	Asymmetric Point Spread Function Estimation and Deconvolution for Serial-Sectioning Block-Face Imaging. <i>Communications in Computer and Information Science</i> , 2020, , 235-249.	0.4	5
45	Challenges and opportunities of integrating imaging and mathematical modelling to interrogate biological processes. <i>International Journal of Biochemistry and Cell Biology</i> , 2022, 146, 106195.	1.2	5
46	Theoretical exploration of blastocyst morphogenesis. <i>International Journal of Developmental Biology</i> , 2009, 53, 447-457.	0.3	4
47	Mathematical modelling of a liver hollow fibre bioreactor. <i>Journal of Theoretical Biology</i> , 2019, 475, 25-33.	0.8	4
48	Tapering analysis of airways with bronchiectasis. , 2018, , .		4
49	<i>In silico</i> framework to inform the design of repair constructs for peripheral nerve injury repair. <i>Journal of the Royal Society Interface</i> , 2022, 19, 20210824.	1.5	4
50	Stress-relaxation and fatigue behaviour of synthetic brow-suspension materials. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015, 42, 116-128.	1.5	3
51	A multiphase model for chemically- and mechanically- induced cell differentiation in a hollow fibre membrane bioreactor: minimising growth factor consumption. <i>Biomechanics and Modeling in Mechanobiology</i> , 2016, 15, 683-700.	1.4	3
52	Lessons and risks of medical device deployment in a global pandemic. <i>The Lancet Global Health</i> , 2021, 9, e395-e396.	2.9	3
53	Modelling-informed cell-seeded nerve repair construct designs for treating peripheral nerve injuries. <i>PLoS Computational Biology</i> , 2021, 17, e1009142.	1.5	3
54	Feasibility of Noninvasive Positive Pressure Ventilation in the Treatment of Oxygen-Dependent COVID-19 Patients in Peru. <i>American Journal of Tropical Medicine and Hygiene</i> , 2021, 105, 727-730.	0.6	3

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55	A combined experimental and computational framework to evaluate the behavior of therapeutic cells for peripheral nerve regeneration. <i>Biotechnology and Bioengineering</i> , 2022, 119, 1980-1996.	1.7	3
56	High oxygen flow rates with the UCL Ventura CPAP device – Authors' reply. <i>Lancet Respiratory Medicine</i> , 2021, 9, e36.	5.2	2
57	A mathematical investigation into the uptake kinetics of nanoparticles in vitro. <i>PLoS ONE</i> , 2021, 16, e0254208.	1.1	2
58	Insights into the design of spray systems for cell therapies for retinal disease using computational modelling. <i>Mathematical Biosciences and Engineering</i> , 2020, 17, 2741-2759.	1.0	2
59	Clinical Classification of Cold and Warm Shock: Is There a Signal in the Noise?*. <i>Pediatric Critical Care Medicine</i> , 2020, 21, 1085-1087.	0.2	1
60	Reproducibility of an airway tapering measurement in computed tomography with application to bronchiectasis. <i>Journal of Medical Imaging</i> , 2019, 6, 1.	0.8	1
61	Mathematical Modeling for Nerve Repair Research. <i>Reference Series in Biomedical Engineering</i> , 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. <i>Proceedings of SPIE</i> , 2014, , .	0.8	0
63	The Mechanics of Brow-Suspension Ptosis Repair: A Comparative Study of Fox Pentagon and Crawford Triangle Techniques. <i>Ophthalmic Plastic and Reconstructive Surgery</i> , 2017, 33, 22-26.	0.4	0
64	Influence of asymptotically-limiting micromechanical properties on the effective behaviour of fibre-supported composite materials. <i>Journal of Engineering Mathematics</i> , 2022, 134, .	0.6	0