David J Smith

List of Publications by Year
in descending order

69 papers	2,922 citations	236833 25 h-index	175177 52 g-index
74 all docs	74 docs citations	74 times ranked	2733 citing authors

#	Article	IF	Citations
1	Response to Letter to the Editor: "Prevention of Adrenal Crisis: Cortisol Response to Major Stress Compared to Stress Dose Hydrocortisone Delivery" Journal of Clinical Endocrinology and Metabolism, 2021, 106, e404-e406.	1.8	1
2	Heads and Tails: Requirements for Informative and Robust Computational Measures of Sperm Motility. , 2021, , 135-150.		0
3	The art of coarse Stokes: Richardson extrapolation improves the accuracy and efficiency of the method of regularized stokeslets. Royal Society Open Science, 2021, 8, 210108.	1.1	5
4	Response to Letter to the Editor from Chee et al: "Prevention of Adrenal Crisis: Cortisol Response to Major Stress Compared to Stress Dose Hydrocortisone Delivery" Journal of Clinical Endocrinology and Metabolism, 2021, 106, e407-e408.	1.8	0
5	The Role of the Double-Layer Potential in Regularised Stokeslet Models of Self-Propulsion. Fluids, 2021, 6, 411.	0.8	1
6	Passively parallel regularized stokeslets. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190528.	1.6	6
7	Prevention of Adrenal Crisis: Cortisol Responses to Major Stress Compared to Stress Dose Hydrocortisone Delivery. Journal of Clinical Endocrinology and Metabolism, 2020, 105, 2262-2274.	1.8	68
8	Simulations of particle tracking in the oligociliated mouse node and implications for left–right symmetry-breaking mechanics. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190161.	1.8	6
9	Rapid optofluidic detection of biomarkers for traumatic brain injury via surface-enhanced Raman spectroscopy. Nature Biomedical Engineering, 2020, 4, 610-623.	11.6	87
10	Doing more with less: The flagellar end piece enhances the propulsive effectiveness of human spermatozoa. Physical Review Fluids, 2020, 5, .	1.0	14
11	Linear Rayleigh–Bénard stability of a transversely isotropic fluid. European Journal of Applied Mathematics, 2019, 30, 659-681.	1.4	1
12	Symmetry-Breaking Cilia-Driven Flow in Embryogenesis. Annual Review of Fluid Mechanics, 2019, 51, 105-128.	10.8	31
13	Motile curved bacteria are Pareto-optimal. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14440-14447.	3.3	49
14	Non-identifiability of parameters for a class of shear-thinning rheological models, with implications for haematological fluid dynamics. Journal of Biomechanics, 2019, 85, 230-238.	0.9	11
15	Rapid sperm capture: high-throughput flagellar waveform analysis. Human Reproduction, 2019, 34, 1173-1185.	0.4	38
16	Simultaneous parameter estimation and variable selection via the logit-normal continuous analogue of the spike-and-slab prior. Journal of the Royal Society Interface, 2019, 16, 20180572.	1.5	10
17	Mathematical modelling of the vitamin C clock reaction. Royal Society Open Science, 2019, 6, 181367.	1.1	2
18	Sharp Quadrature Error Bounds for the Nearest-Neighbor Discretization of the Regularized Stokeslet Boundary Integral Equation. SIAM Journal of Scientific Computing, 2019, 41, B139-B152.	1.3	8

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19	Oriented suspension mechanics with application to improving flow linear dichroism spectroscopy. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 475, 20190184.	1.0	0
20	Wall stress enhanced exocytosis of extracellular vesicles as a possible mechanism of left-right symmetry-breaking in vertebrate development. Journal of Theoretical Biology, 2019, 460, 220-226.	0.8	7
21	Efficient implementation of elastohydrodynamics via integral operators. Physical Review Fluids, 2019, 4, .	1.0	19
22	Regularized Stokeslet rings: An efficient method for axisymmetric Stokes flow with application to the growing pollen tube. Physical Review Fluids, 2019, 4, .	1.0	2
23	Influence of microvascular sutures on shear strain rate in realistic pulsatile flow. Microvascular Research, 2018, 118, 69-81.	1.1	2
24	BIOLOGICAL FLUID MECHANICS UNDER THE MICROSCOPE: A TRIBUTE TO JOHN BLAKE. ANZIAM Journal, 2018, 59, 416-442.	0.3	2
25	Human sperm swimming in a high viscosity mucus analogue. Journal of Theoretical Biology, 2018, 446, 1-10.	0.8	36
26	A nearest-neighbour discretisation of the regularized stokeslet boundary integral equation. Journal of Computational Physics, 2018, 358, 88-102.	1.9	23
27	Influences of transversely isotropic rheology and translational diffusion on the stability of active suspensions. Royal Society Open Science, 2018, 5, 180456.	1.1	6
28	On viscous propulsion in active transversely isotropic media. Journal of Fluid Mechanics, 2018, 855, 408-420.	1.4	4
29	Special issue in honour of Professor John Blake FIMA CMath. IMA Journal of Applied Mathematics, 2018, 83, 553-555.	0.8	0
30	Learning pharmacokinetic models for in vivo glucocorticoid activation. Journal of Theoretical Biology, 2018, 455, 222-231.	0.8	6
31	CASA: tracking the past and plotting the future. Reproduction, Fertility and Development, 2018, 30, 867.	0.1	41
32	Meshfree and efficient modeling of swimming cells. Physical Review Fluids, 2018, 3, .	1.0	21
33	Mathematical modelling of the antibiotic-induced morphological transition of Pseudomonas aeruginosa. PLoS Computational Biology, 2018, 14, e1006012.	1.5	19
34	Dynamics of cilia length in leftâ€"right development. Royal Society Open Science, 2017, 4, 161102.	1.1	19
35	Coarse-Graining the Fluid Flow around a Human Sperm. Physical Review Letters, 2017, 118, 124501.	2.9	67
36	Viscous propulsion in active transversely isotropic media. Journal of Fluid Mechanics, 2017, 812, 501-524.	1.4	11

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37	Model-based image analysis of a tethered Brownian fibre for shear stress sensing. Journal of the Royal Society Interface, 2017, 14, 20170564.	1.5	5
38	Three-dimensional flow in Kupffer's Vesicle. Journal of Mathematical Biology, 2016, 73, 705-725.	0.8	18
39	On the variance of sums of arithmetic functions over primes in short intervals and pair correlation for<i>L</i>-functions in the Selberg class. Journal of the London Mathematical Society, 2016, 94, 161-185.	0.5	7
40	Bringing Awareness of Fluid Mechanics to Reproductive Medicine. , 2016, , 251-256.		0
41	Spermatozoa scattering by a microchannel feature: an elastohydrodynamic model. Royal Society Open Science, 2015, 2, 140475.	1.1	19
42	Linear Taylor–Couette stability of a transversely isotropic fluid. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150141.	1.0	6
43	Polymerase Chain Reaction on a Viral Nanoparticle. ACS Synthetic Biology, 2015, 4, 1316-1325.	1.9	5
44	Direct detection and measurement of wall shear stress using a filamentous bio-nanoparticle. Nano Research, 2015, 8, 3307-3315.	5.8	7
45	Glyph-Based Video Visualization for Semen Analysis. IEEE Transactions on Visualization and Computer Graphics, 2015, 21, 980-993.	2.9	23
46	The mechanics of hyperactivation in adhered human sperm. Royal Society Open Science, 2014, 1, 140230.	1.1	26
47	Organized chaos in Kupffer's vesicle: How a heterogeneous structure achieves consistent left-right patterning. Bioarchitecture, 2014, 4, 119-125.	1.5	22
48	Left-Right Organizer Flow Dynamics: How Much Cilia Activity Reliably Yields Laterality?. Developmental Cell, 2014, 29, 716-728.	3.1	85
49	Physics of rheologically enhanced propulsion: Different strokes in generalized Stokes. Physics of Fluids, 2013, 25, .	1.6	67
50	Calculations of flow-induced orientation distributions for analysis of linear dichroism spectroscopy. Soft Matter, 2013, 9, 4977.	1.2	15
51	Human spermatozoa migration in microchannels reveals boundary-following navigation. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 8007-8010.	3.3	247
52	Symmetry breaking cilia-driven flow in the zebrafish embryo. Journal of Fluid Mechanics, 2012, 705, 26-45.	1.4	22
53	Modelling the fluid mechanics of cilia and flagella in reproduction and development. European Physical Journal E, 2012, 35, 111.	0.7	41
54	Comment on the Article by J. Elgeti, U. B. Kaupp, and G. Gompper: Hydrodynamics of Sperm Cells Near Surfaces. Biophysical Journal, 2011, 100, 2318-2320.	0.2	16

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55	Mathematical embryology: the fluid mechanics of nodal cilia. Journal of Engineering Mathematics, 2011, 70, 255-279.	0.6	50
56	Sperm motility: is viscosity fundamental to progress?. Molecular Human Reproduction, 2011, 17, 539-544.	1.3	95
57	Urine Steroid Metabolomics as a Biomarker Tool for Detecting Malignancy in Adrenal Tumors. Journal of Clinical Endocrinology and Metabolism, 2011, 96, 3775-3784.	1.8	369
58	Modelling bacterial behaviour close to a no-slip plane boundary: the influence of bacterialÂgeometry. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 1725-1748.	1.0	122
59	Nonlinear instability in flagellar dynamics: a novel modulation mechanism in sperm migration?. Journal of the Royal Society Interface, 2010, 7, 1689-1697.	1.5	94
60	A boundary element regularized Stokeslet method applied to cilia- and flagella-driven flow. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 3605-3626.	1.0	83
61	Mathematical modelling of cilia-driven transport of biological fluids. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 2417-2439.	1.0	23
62	Bend propagation in the flagella of migrating human sperm, and its modulation by viscosity. Cytoskeleton, 2009, 66, 220-236.	4.4	181
63	Human sperm accumulation near surfaces: a simulation study. Journal of Fluid Mechanics, 2009, 621, 289-320.	1.4	186
64	Modelling mucociliary clearance. Respiratory Physiology and Neurobiology, 2008, 163, 178-188.	0.7	147
65	Fluid mechanics of nodal flow due to embryonic primary cilia. Journal of the Royal Society Interface, 2008, 5, 567-573.	1.5	102
66	A Viscoelastic Traction Layer Model of Muco-Ciliary Transport. Bulletin of Mathematical Biology, 2007, 69, 289-327.	0.9	61
67	A Model of Tracer Transport in Airway Surface Liquid. Bulletin of Mathematical Biology, 2007, 69, 817-836.	0.9	20
68	Discrete Cilia Modelling with Singularity Distributions: Application to the Embryonic Node and the Airway Surface Liquid. Bulletin of Mathematical Biology, 2007, 69, 1477-1510.	0.9	74
69	Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay. International Journal of Geomechanics, 2006, 6, 328-341.	1.3	26