

# David J Smith

## List of Publications by Year in descending order

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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	Urine Steroid Metabolomics as a Biomarker Tool for Detecting Malignancy in Adrenal Tumors. <i>Journal of Clinical Endocrinology and Metabolism</i> , 2011, 96, 3775-3784.	1.8	369
2	Human spermatozoa migration in microchannels reveals boundary-following navigation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 8007-8010.	3.3	247
3	Human sperm accumulation near surfaces: a simulation study. <i>Journal of Fluid Mechanics</i> , 2009, 621, 289-320.	1.4	186
4	Bend propagation in the flagella of migrating human sperm, and its modulation by viscosity. <i>Cytoskeleton</i> , 2009, 66, 220-236.	4.4	181
5	Modelling mucociliary clearance. <i>Respiratory Physiology and Neurobiology</i> , 2008, 163, 178-188.	0.7	147
6	Modelling bacterial behaviour close to a no-slip plane boundary: the influence of bacterial geometry. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2010, 466, 1725-1748.	1.0	122
7	Fluid mechanics of nodal flow due to embryonic primary cilia. <i>Journal of the Royal Society Interface</i> , 2008, 5, 567-573.	1.5	102
8	Sperm motility: is viscosity fundamental to progress?. <i>Molecular Human Reproduction</i> , 2011, 17, 539-544.	1.3	95
9	Nonlinear instability in flagellar dynamics: a novel modulation mechanism in sperm migration?. <i>Journal of the Royal Society Interface</i> , 2010, 7, 1689-1697.	1.5	94
10	Rapid optofluidic detection of biomarkers for traumatic brain injury via surface-enhanced Raman spectroscopy. <i>Nature Biomedical Engineering</i> , 2020, 4, 610-623.	11.6	87
11	Left-Right Organizer Flow Dynamics: How Much Cilia Activity Reliably Yields Laterality?. <i>Developmental Cell</i> , 2014, 29, 716-728.	3.1	85
12	A boundary element regularized Stokeslet method applied to cilia- and flagella-driven flow. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2009, 465, 3605-3626.	1.0	83
13	Discrete Cilia Modelling with Singularity Distributions: Application to the Embryonic Node and the Airway Surface Liquid. <i>Bulletin of Mathematical Biology</i> , 2007, 69, 1477-1510.	0.9	74
14	Prevention of Adrenal Crisis: Cortisol Responses to Major Stress Compared to Stress Dose Hydrocortisone Delivery. <i>Journal of Clinical Endocrinology and Metabolism</i> , 2020, 105, 2262-2274.	1.8	68
15	Physics of rheologically enhanced propulsion: Different strokes in generalized Stokes. <i>Physics of Fluids</i> , 2013, 25, .	1.6	67
16	Coarse-Graining the Fluid Flow around a Human Sperm. <i>Physical Review Letters</i> , 2017, 118, 124501.	2.9	67
17	A Viscoelastic Traction Layer Model of Muco-Ciliary Transport. <i>Bulletin of Mathematical Biology</i> , 2007, 69, 289-327.	0.9	61
18	Mathematical embryology: the fluid mechanics of nodal cilia. <i>Journal of Engineering Mathematics</i> , 2011, 70, 255-279.	0.6	50

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19	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
20	Modelling the fluid mechanics of cilia and flagella in reproduction and development. European Physical Journal E, 2012, 35, 111.	0.7	41
21	CASA: tracking the past and plotting the future. Reproduction, Fertility and Development, 2018, 30, 867.	0.1	41
22	Rapid sperm capture: high-throughput flagellar waveform analysis. Human Reproduction, 2019, 34, 1173-1185.	0.4	38
23	Human sperm swimming in a high viscosity mucus analogue. Journal of Theoretical Biology, 2018, 446, 1-10.	0.8	36
24	Symmetry-Breaking Cilia-Driven Flow in Embryogenesis. Annual Review of Fluid Mechanics, 2019, 51, 105-128.	10.8	31
25	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
26	The mechanics of hyperactivation in adhered human sperm. Royal Society Open Science, 2014, 1, 140230.	1.1	26
27	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
28	Glyph-Based Video Visualization for Semen Analysis. IEEE Transactions on Visualization and Computer Graphics, 2015, 21, 980-993.	2.9	23
29	A nearest-neighbour discretisation of the regularized stokeslet boundary integral equation. Journal of Computational Physics, 2018, 358, 88-102.	1.9	23
30	Symmetry breaking cilia-driven flow in the zebrafish embryo. Journal of Fluid Mechanics, 2012, 705, 26-45.	1.4	22
31	Organized chaos in Kupffer's vesicle: How a heterogeneous structure achieves consistent left-right patterning. Bioarchitecture, 2014, 4, 119-125.	1.5	22
32	Meshfree and efficient modeling of swimming cells. Physical Review Fluids, 2018, 3, .	1.0	21
33	A Model of Tracer Transport in Airway Surface Liquid. Bulletin of Mathematical Biology, 2007, 69, 817-836.	0.9	20
34	Spermatozoa scattering by a microchannel feature: an elasto-hydrodynamic model. Royal Society Open Science, 2015, 2, 140475.	1.1	19
35	Dynamics of cilia length in left-right development. Royal Society Open Science, 2017, 4, 161102.	1.1	19
36	Efficient implementation of elasto-hydrodynamics via integral operators. Physical Review Fluids, 2019, 4, .	1.0	19

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37	Mathematical modelling of the antibiotic-induced morphological transition of <i>Pseudomonas aeruginosa</i> . <i>PLoS Computational Biology</i> , 2018, 14, e1006012.	1.5	19
38	Three-dimensional flow in Kupffer's Vesicle. <i>Journal of Mathematical Biology</i> , 2016, 73, 705-725.	0.8	18
39	Comment on the Article by J. Elgeti, U. B. Kaupp, and G. Gompper: Hydrodynamics of Sperm Cells Near Surfaces. <i>Biophysical Journal</i> , 2011, 100, 2318-2320.	0.2	16
40	Calculations of flow-induced orientation distributions for analysis of linear dichroism spectroscopy. <i>Soft Matter</i> , 2013, 9, 4977.	1.2	15
41	Doing more with less: The flagellar end piece enhances the propulsive effectiveness of human spermatozoa. <i>Physical Review Fluids</i> , 2020, 5, .	1.0	14
42	Viscous propulsion in active transversely isotropic media. <i>Journal of Fluid Mechanics</i> , 2017, 812, 501-524.	1.4	11
43	Non-identifiability of parameters for a class of shear-thinning rheological models, with implications for haematological fluid dynamics. <i>Journal of Biomechanics</i> , 2019, 85, 230-238.	0.9	11
44	Simultaneous parameter estimation and variable selection via the logit-normal continuous analogue of the spike-and-slab prior. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20180572.	1.5	10
45	Sharp Quadrature Error Bounds for the Nearest-Neighbor Discretization of the Regularized Stokeslet Boundary Integral Equation. <i>SIAM Journal of Scientific Computing</i> , 2019, 41, B139-B152.	1.3	8
46	Direct detection and measurement of wall shear stress using a filamentous bio-nanoparticle. <i>Nano Research</i> , 2015, 8, 3307-3315.	5.8	7
47	On the variance of sums of arithmetic functions over primes in short intervals and pair correlation for $L$ -functions in the Selberg class. <i>Journal of the London Mathematical Society</i> , 2016, 94, 161-185.	0.5	7
48	Wall stress enhanced exocytosis of extracellular vesicles as a possible mechanism of left-right symmetry-breaking in vertebrate development. <i>Journal of Theoretical Biology</i> , 2019, 460, 220-226.	0.8	7
49	Linear Taylor-Couette stability of a transversely isotropic fluid. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015, 471, 20150141.	1.0	6
50	Influences of transversely isotropic rheology and translational diffusion on the stability of active suspensions. <i>Royal Society Open Science</i> , 2018, 5, 180456.	1.1	6
51	Learning pharmacokinetic models for in vivo glucocorticoid activation. <i>Journal of Theoretical Biology</i> , 2018, 455, 222-231.	0.8	6
52	Passively parallel regularized stokeslets. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2020, 378, 20190528.	1.6	6
53	Simulations of particle tracking in the oligociliated mouse node and implications for left-right symmetry-breaking mechanics. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2020, 375, 20190161.	1.8	6
54	Polymerase Chain Reaction on a Viral Nanoparticle. <i>ACS Synthetic Biology</i> , 2015, 4, 1316-1325.	1.9	5

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55	Model-based image analysis of a tethered Brownian fibre for shear stress sensing. <i>Journal of the Royal Society Interface</i> , 2017, 14, 20170564.	1.5	5
56	The art of coarse Stokes: Richardson extrapolation improves the accuracy and efficiency of the method of regularized stokeslets. <i>Royal Society Open Science</i> , 2021, 8, 210108.	1.1	5
57	On viscous propulsion in active transversely isotropic media. <i>Journal of Fluid Mechanics</i> , 2018, 855, 408-420.	1.4	4
58	Influence of microvascular sutures on shear strain rate in realistic pulsatile flow. <i>Microvascular Research</i> , 2018, 118, 69-81.	1.1	2
59	BIOLOGICAL FLUID MECHANICS UNDER THE MICROSCOPE: A TRIBUTE TO JOHN BLAKE. <i>ANZIAM Journal</i> , 2018, 59, 416-442.	0.3	2
60	Mathematical modelling of the vitamin C clock reaction. <i>Royal Society Open Science</i> , 2019, 6, 181367.	1.1	2
61	Regularized Stokeslet rings: An efficient method for axisymmetric Stokes flow with application to the growing pollen tube. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	2
62	Linear Rayleigh-Bénard stability of a transversely isotropic fluid. <i>European Journal of Applied Mathematics</i> , 2019, 30, 659-681.	1.4	1
63	Response to Letter to the Editor: "Prevention of Adrenal Crisis: Cortisol Response to Major Stress Compared to Stress Dose Hydrocortisone Delivery". <i>Journal of Clinical Endocrinology and Metabolism</i> , 2021, 106, e404-e406.	1.8	1
64	The Role of the Double-Layer Potential in Regularised Stokeslet Models of Self-Propulsion. <i>Fluids</i> , 2021, 6, 411.	0.8	1
65	Special issue in honour of Professor John Blake FIMA CMath. <i>IMA Journal of Applied Mathematics</i> , 2018, 83, 553-555.	0.8	0
66	Oriented suspension mechanics with application to improving flow linear dichroism spectroscopy. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2019, 475, 20190184.	1.0	0
67	Heads and Tails: Requirements for Informative and Robust Computational Measures of Sperm Motility. , 2021, , 135-150.		0
68	Bringing Awareness of Fluid Mechanics to Reproductive Medicine. , 2016, , 251-256.		0
69	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". <i>Journal of Clinical Endocrinology and Metabolism</i> , 2021, 106, e407-e408.	1.8	0