Lisa J Fauci

List of Publications by Year
in descending order

63 papers	3,704 citations	126907 33 h-index	128289 60 g-index
65 all docs	65 docs citations	65 times ranked	2395 citing authors

#	Article	IF	Citations
1	BIOFLUIDMECHANICS OF REPRODUCTION. Annual Review of Fluid Mechanics, 2006, 38, 371-394.	25.0	351
2	The method of regularized Stokeslets in three dimensions:â€ƒ Analysis, validation, and application to helical swimming. Physics of Fluids, 2005, 17, 031504.	4.0	327
3	A computational model of aquatic animal locomotion. Journal of Computational Physics, 1988, 77, 85-108.	3.8	286
4	Interactions between internal forces, body stiffness, and fluid environment in a neuromechanical model of lamprey swimming. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 19832-19837.	7.1	255
5	Viscoelastic Fluid Response Can Increase the Speed and Efficiency of a Free Swimmer. Physical Review Letters, 2010, 104, 038101.	7.8	222
6	Sperm motility in the presence of boundaries. Bulletin of Mathematical Biology, 1995, 57, 679-699.	1.9	160
7	Modeling Biofilm Processes Using the Immersed Boundary Method. Journal of Computational Physics, 1996, 129, 57-73.	3.8	121
8	Interaction of oscillating filaments: A computational study. Journal of Computational Physics, 1990, 86, 294-313.	3.8	101
9	An Integrative Model of Internal Axoneme Mechanics and External Fluid Dynamics in Ciliary Beating. Journal of Theoretical Biology, 2000, 207, 415-430.	1.7	83
10	A Microscale Model of Bacterial Swimming, Chemotaxis and Substrate Transport. Journal of Theoretical Biology, 1995, 177, 325-340.	1.7	76
11	Truncated newton methods and the modeling of complex immersed elastic structures. Communications on Pure and Applied Mathematics, 1993, 46, 787-818.	3.1	74
12	A computational model of the collective fluid dynamics of motile micro-organisms. Journal of Fluid Mechanics, 2002, 455, 149-174.	3.4	68
13	A computational model of ameboid deformation and locomotion. European Biophysics Journal, 1998, 27, 532-539.	2.2	66
14	Modeling physiological resistance in bacterial biofilms. Bulletin of Mathematical Biology, 2005, 67, 831-853.	1.9	66
15	Fluid Dynamic Models of Flagellar and Ciliary Beating. Annals of the New York Academy of Sciences, 2007, 1101, 494-505.	3.8	66
16	Simulation of swimming organisms: coupling internal mechanics with external fluid dynamics. Computing in Science and Engineering, 2004, 6, 38-45.	1.2	64
17	Role of body stiffness in undulatory swimming: Insights from robotic and computational models. Physical Review Fluids, 2016, 1, .	2.5	59
18	Coupling biochemistry and hydrodynamics captures hyperactivated sperm motility in a simple flagellar model. Journal of Theoretical Biology, 2011, 283, 203-216.	1.7	58

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19	An Integrative Computational Model of Multiciliary Beating. Bulletin of Mathematical Biology, 2008, 70, 1192-1215.	1.9	55
20	Peristaltic pumping of solid particles. Computers and Fluids, 1992, 21, 583-598.	2.5	54
21	A computational model of the mechanics of growth of the villous trophoblast bilayer. Bulletin of Mathematical Biology, 2004, 66, 199-232.	1.9	50
22	Peristaltic pumping and irreversibility of a Stokesian viscoelastic fluid. Physics of Fluids, 2008, 20, .	4.0	49
23	Nutrient transport and acquisition by diatom chains in a moving fluid. Journal of Fluid Mechanics, 2009, 638, 401-421.	3.4	49
24	A microscale model of bacterial and biofilm dynamics in porous media. , 2000, 68, 536-547.		44
25	Using Lagrangian coherent structures to analyze fluid mixing by cilia. Chaos, 2010, 20, 017511.	2.5	44
26	The role of mechanical resonance in the neural control of swimming in fishes. Zoology, 2014, 117, 48-56.	1.2	43
27	Rotational dynamics of a superhelix towed in a Stokes fluid. Physics of Fluids, 2007, 19, 103105.	4.0	41
28	Mathematical modeling of calcium signaling during sperm hyperactivation. Molecular Human Reproduction, 2011, 17, 500-510.	2.8	41
29	Swimming performance, resonance and shape evolution in heaving flexible panels. Journal of Fluid Mechanics, 2018, 847, 386-416.	3.4	41
30	Flexible filaments buckle into helicoidal shapes in strong compressional flows. Nature Physics, 2020, 16, 689-694.	16.7	41
31	Bistability in the synchronization of actuatedÂmicrofilaments. Journal of Fluid Mechanics, 2018, 836, 304-323.	3.4	39
32	Hydrodynamics of diatom chains and semiflexible fibres. Journal of the Royal Society Interface, 2014, 11, 20140314.	3.4	38
33	The dynamics of sperm detachment from epithelium in a coupled fluid-biochemical model of hyperactivated motility. Journal of Theoretical Biology, 2014, 354, 81-94.	1.7	36
34	A fully three-dimensional model of the interaction of driven elastic filaments in a Stokes flow with applications to sperm motility. Journal of Biomechanics, 2015, 48, 1639-1651.	2.1	35
35	A Computational Model of the Fluid Dynamics of Undulatory and Flagellar Swimming. American Zoologist, 1996, 36, 599-607.	0.7	34
36	A Model of CatSper Channel Mediated Calcium Dynamics in Mammalian Spermatozoa. Bulletin of Mathematical Biology, 2010, 72, 1925-1946.	1.9	33

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37	The effect of intrinsic muscular nonlinearities on the energetics of locomotion in a computational model of an anguilliform swimmer. Journal of Theoretical Biology, 2015, 385, 119-129.	1.7	30
38	Peristaltic Pumping of Solid Particles Immersed in a Viscoelastic Fluid. Mathematical Modelling of Natural Phenomena, 2011, 6, 67-83.	2.4	28
39	Enhanced flagellar swimming through a compliant viscoelastic network in Stokes flow. Journal of Fluid Mechanics, 2016, 792, 775-797.	3.4	28
40	Hydrodynamic interactions of sheets vs filaments: Synchronization, attraction, and alignment. Physics of Fluids, 2015, 27, .	4.0	27
41	Sperm Motility and Multiciliary Beating: An Integrative Mechanical Model. Computers and Mathematics With Applications, 2006, 52, 749-758.	2.7	23
42	The role of curvature feedback in the energetics and dynamics of lamprey swimming: A closed-loop model. PLoS Computational Biology, 2018, 14, e1006324.	3.2	23
43	Shape oscillations of a droplet in an Oldroyd-B fluid. Physica D: Nonlinear Phenomena, 2011, 240, 1593-1601.	2.8	22
44	A model of Stokesian peristalsis and vesicle transport in a three-dimensional closed cavity. Journal of Biomechanics, 2015, 48, 1631-1638.	2.1	22
45	Complex dynamics of long, flexible fibers in shear. Journal of Non-Newtonian Fluid Mechanics, 2019, 269, 73-81.	2.4	20
46	Hydrodynamic effects of spines: A different spin. Limnology & Oceanography Fluids & Environments, 2011, 1, 110-119.	1.7	19
47	The action of waving cylindrical rings in a viscous fluid. Journal of Fluid Mechanics, 2011, 671, 574-586.	3.4	19
48	A Model for the Acrosome Reaction in Mammalian Sperm. Bulletin of Mathematical Biology, 2018, 80, 2481-2501.	1.9	18
49	Stokesian peristaltic pumping in a three-dimensional tube with a phase-shifted asymmetry. Physics of Fluids, 2011, 23, .	4.0	17
50	Effects of cell morphology and attachment to a surface on the hydrodynamic performance of unicellular choanoflagellates. Journal of the Royal Society Interface, 2019, 16, 20180736.	3.4	17
51	Modeling viscoelastic networks in Stokes flow. Physics of Fluids, 2014, 26, .	4.0	16
52	Resilience of neural networks for locomotion. Journal of Physiology, 2021, 599, 3825-3840.	2.9	15
53	Regularized image system for Stokes flow outside a solid sphere. Journal of Computational Physics, 2016, 317, 165-184.	3.8	11
54	Evaluation of interfacial fluid dynamical stresses using the immersed boundary method. Discrete and Continuous Dynamical Systems - Series B, 2009, 11, 519-540.	0.9	11

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55	Computing Flows Around Microorganisms: Slender-Body Theory and Beyond. American Mathematical Monthly, 2014, 121, 810-823.	0.3	9
56	Mixing and pumping by pairs of helices in a viscous fluid. Physical Review E, 2018, 97, 023101.	2.1	9
57	Interaction of toroidal swimmers in Stokes flow. Physical Review E, 2017, 95, 043102.	2.1	8
58	Elastohydrodynamics of swimming helices: Effects of flexibility and confinement. Physical Review Fluids, 2019, 4, .	2.5	8
59	Flow Induced by Bacterial Carpets and Transport of Microscale Loads. The IMA Volumes in Mathematics and Its Applications, 2015, , 35-53.	0.5	6
60	Dynamics of a macroscopic elastic fibre in aÂpolymeric cellular flow. Journal of Fluid Mechanics, 2017, 817, 388-405.	3.4	6
61	A Microscale Model of Microbial Transport in Porous Media. Water Science and Technology Library, 1994, , 441-448.	0.3	2
62	Error estimation for immersed interface solutions. Discrete and Continuous Dynamical Systems - Series B, 2012, 17, 1185-1203.	0.9	1
63	A Fluid-Structure Interaction Model of Ciliary Beating. The IMA Volumes in Mathematics and Its Applications, 2001, , 71-79.	0.5	1