Lisa J Fauci

List of Publications by Year
in descending order

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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	Resilience of neural networks for locomotion. Journal of Physiology, 2021, 599, 3825-3840.	2.9	15
2	Flexible filaments buckle into helicoidal shapes in strong compressional flows. Nature Physics, 2020, 16, 689-694.	16.7	41
3	Complex dynamics of long, flexible fibers in shear. Journal of Non-Newtonian Fluid Mechanics, 2019, 269, 73-81.	2.4	20
4	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
5	Elastohydrodynamics of swimming helices: Effects of flexibility and confinement. Physical Review Fluids, 2019, 4, .	2.5	8
6	Mixing and pumping by pairs of helices in a viscous fluid. Physical Review E, 2018, 97, 023101.	2.1	9
7	Bistability in the synchronization of actuatedÂmicrofilaments. Journal of Fluid Mechanics, 2018, 836, 304-323.	3.4	39
8	Swimming performance, resonance and shape evolution in heaving flexible panels. Journal of Fluid Mechanics, 2018, 847, 386-416.	3.4	41
9	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
10	A Model for the Acrosome Reaction in Mammalian Sperm. Bulletin of Mathematical Biology, 2018, 80, 2481-2501.	1.9	18
11	Dynamics of a macroscopic elastic fibre in aÂpolymeric cellular flow. Journal of Fluid Mechanics, 2017, 817, 388-405.	3.4	6
12	Interaction of toroidal swimmers in Stokes flow. Physical Review E, 2017, 95, 043102.	2.1	8
13	Enhanced flagellar swimming through a compliant viscoelastic network in Stokes flow. Journal of Fluid Mechanics, 2016, 792, 775-797.	3.4	28
14	Regularized image system for Stokes flow outside a solid sphere. Journal of Computational Physics, 2016, 317, 165-184.	3.8	11
15	Role of body stiffness in undulatory swimming: Insights from robotic and computational models. Physical Review Fluids, 2016, 1, .	2.5	59
16	Hydrodynamic interactions of sheets vs filaments: Synchronization, attraction, and alignment. Physics of Fluids, 2015, 27, .	4.0	27
17	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
18	A model of Stokesian peristalsis and vesicle transport in a three-dimensional closed cavity. Journal of Biomechanics, 2015, 48, 1631-1638.	2.1	22

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19	Flow Induced by Bacterial Carpets and Transport of Microscale Loads. The IMA Volumes in Mathematics and Its Applications, 2015, , 35-53.	0.5	6
20	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
21	Computing Flows Around Microorganisms: Slender-Body Theory and Beyond. American Mathematical Monthly, 2014, 121, 810-823.	0.3	9
22	Modeling viscoelastic networks in Stokes flow. Physics of Fluids, 2014, 26, .	4.0	16
23	The role of mechanical resonance in the neural control of swimming in fishes. Zoology, 2014, 117, 48-56.	1.2	43
24	Hydrodynamics of diatom chains and semiflexible fibres. Journal of the Royal Society Interface, 2014, 11, 20140314.	3.4	38
25	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
26	Error estimation for immersed interface solutions. Discrete and Continuous Dynamical Systems - Series B, 2012, 17, 1185-1203.	0.9	1
27	Hydrodynamic effects of spines: A different spin. Limnology & Oceanography Fluids & Environments, 2011, 1, 110-119.	1.7	19
28	The action of waving cylindrical rings in a viscous fluid. Journal of Fluid Mechanics, 2011, 671, 574-586.	3.4	19
29	Shape oscillations of a droplet in an Oldroyd-B fluid. Physica D: Nonlinear Phenomena, 2011, 240, 1593-1601.	2.8	22
30	Coupling biochemistry and hydrodynamics captures hyperactivated sperm motility in a simple flagellar model. Journal of Theoretical Biology, 2011, 283, 203-216.	1.7	58
31	Stokesian peristaltic pumping in a three-dimensional tube with a phase-shifted asymmetry. Physics of Fluids, 2011, 23, .	4.0	17
32	Peristaltic Pumping of Solid Particles Immersed in a Viscoelastic Fluid. Mathematical Modelling of Natural Phenomena, 2011, 6, 67-83.	2.4	28
33	Mathematical modeling of calcium signaling during sperm hyperactivation. Molecular Human Reproduction, 2011, 17, 500-510.	2.8	41
34	A Model of CatSper Channel Mediated Calcium Dynamics in Mammalian Spermatozoa. Bulletin of Mathematical Biology, 2010, 72, 1925-1946.	1.9	33
35	Viscoelastic Fluid Response Can Increase the Speed and Efficiency of a Free Swimmer. Physical Review Letters, 2010, 104, 038101.	7.8	222
36	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

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37	Using Lagrangian coherent structures to analyze fluid mixing by cilia. Chaos, 2010, 20, 017511.	2.5	44
38	Nutrient transport and acquisition by diatom chains in a moving fluid. Journal of Fluid Mechanics, 2009, 638, 401-421.	3.4	49
39	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
40	An Integrative Computational Model of Multiciliary Beating. Bulletin of Mathematical Biology, 2008, 70, 1192-1215.	1.9	55
41	Peristaltic pumping and irreversibility of a Stokesian viscoelastic fluid. Physics of Fluids, 2008, 20, .	4.0	49
42	Rotational dynamics of a superhelix towed in a Stokes fluid. Physics of Fluids, 2007, 19, 103105.	4.0	41
43	Fluid Dynamic Models of Flagellar and Ciliary Beating. Annals of the New York Academy of Sciences, 2007, 1101, 494-505.	3.8	66
44	BIOFLUIDMECHANICS OF REPRODUCTION. Annual Review of Fluid Mechanics, 2006, 38, 371-394.	25.0	351
45	Sperm Motility and Multiciliary Beating: An Integrative Mechanical Model. Computers and Mathematics With Applications, 2006, 52, 749-758.	2.7	23
46	Modeling physiological resistance in bacterial biofilms. Bulletin of Mathematical Biology, 2005, 67, 831-853.	1.9	66
47	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
48	A computational model of the mechanics of growth of the villous trophoblast bilayer. Bulletin of Mathematical Biology, 2004, 66, 199-232.	1.9	50
49	Simulation of swimming organisms: coupling internal mechanics with external fluid dynamics. Computing in Science and Engineering, 2004, 6, 38-45.	1.2	64
50	A computational model of the collective fluid dynamics of motile micro-organisms. Journal of Fluid Mechanics, 2002, 455, 149-174.	3.4	68
51	A Fluid-Structure Interaction Model of Ciliary Beating. The IMA Volumes in Mathematics and Its Applications, 2001, , 71-79.	0.5	1
52	A microscale model of bacterial and biofilm dynamics in porous media. , 2000, 68, 536-547.		44
53	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
54	A computational model of ameboid deformation and locomotion. European Biophysics Journal, 1998, 27, 532-539.	2.2	66

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55	Modeling Biofilm Processes Using the Immersed Boundary Method. Journal of Computational Physics, 1996, 129, 57-73.	3.8	121
56	A Computational Model of the Fluid Dynamics of Undulatory and Flagellar Swimming. American Zoologist, 1996, 36, 599-607.	0.7	34
57	A Microscale Model of Bacterial Swimming, Chemotaxis and Substrate Transport. Journal of Theoretical Biology, 1995, 177, 325-340.	1.7	76
58	Sperm motility in the presence of boundaries. Bulletin of Mathematical Biology, 1995, 57, 679-699.	1.9	160
59	A Microscale Model of Microbial Transport in Porous Media. Water Science and Technology Library, 1994, , 441-448.	0.3	2
60	Truncated newton methods and the modeling of complex immersed elastic structures. Communications on Pure and Applied Mathematics, 1993, 46, 787-818.	3.1	74
61	Peristaltic pumping of solid particles. Computers and Fluids, 1992, 21, 583-598.	2.5	54
62	Interaction of oscillating filaments: A computational study. Journal of Computational Physics, 1990, 86, 294-313.	3.8	101
63	A computational model of aquatic animal locomotion. Journal of Computational Physics, 1988, 77, 85-108.	3.8	286