

Lisa J Fauci

List of Publications by Year in descending order

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63
papers

3,704
citations

126708

33
h-index

128067

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.	10.8	351
2	The method of regularized Stokeslets in three dimensions: Analysis, validation, and application to helical swimming. Physics of Fluids, 2005, 17, 031504.	1.6	327
3	A computational model of aquatic animal locomotion. Journal of Computational Physics, 1988, 77, 85-108.	1.9	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.	3.3	255
5	Viscoelastic Fluid Response Can Increase the Speed and Efficiency of a Free Swimmer. Physical Review Letters, 2010, 104, 038101.	2.9	222
6	Sperm motility in the presence of boundaries. Bulletin of Mathematical Biology, 1995, 57, 679-699.	0.9	160
7	Modeling Biofilm Processes Using the Immersed Boundary Method. Journal of Computational Physics, 1996, 129, 57-73.	1.9	121
8	Interaction of oscillating filaments: A computational study. Journal of Computational Physics, 1990, 86, 294-313.	1.9	101
9	An Integrative Model of Internal Axoneme Mechanics and External Fluid Dynamics in Ciliary Beating. Journal of Theoretical Biology, 2000, 207, 415-430.	0.8	83
10	A Microscale Model of Bacterial Swimming, Chemotaxis and Substrate Transport. Journal of Theoretical Biology, 1995, 177, 325-340.	0.8	76
11	Truncated newton methods and the modeling of complex immersed elastic structures. Communications on Pure and Applied Mathematics, 1993, 46, 787-818.	1.2	74
12	A computational model of the collective fluid dynamics of motile micro-organisms. Journal of Fluid Mechanics, 2002, 455, 149-174.	1.4	68
13	A computational model of ameboid deformation and locomotion. European Biophysics Journal, 1998, 27, 532-539.	1.2	66
14	Modeling physiological resistance in bacterial biofilms. Bulletin of Mathematical Biology, 2005, 67, 831-853.	0.9	66
15	Fluid Dynamic Models of Flagellar and Ciliary Beating. Annals of the New York Academy of Sciences, 2007, 1101, 494-505.	1.8	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, .	1.0	59
18	Coupling biochemistry and hydrodynamics captures hyperactivated sperm motility in a simple flagellar model. Journal of Theoretical Biology, 2011, 283, 203-216.	0.8	58

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19	An Integrative Computational Model of Multiciliary Beating. <i>Bulletin of Mathematical Biology</i> , 2008, 70, 1192-1215.	0.9	55
20	Peristaltic pumping of solid particles. <i>Computers and Fluids</i> , 1992, 21, 583-598.	1.3	54
21	A computational model of the mechanics of growth of the villous trophoblast bilayer. <i>Bulletin of Mathematical Biology</i> , 2004, 66, 199-232.	0.9	50
22	Peristaltic pumping and irreversibility of a Stokesian viscoelastic fluid. <i>Physics of Fluids</i> , 2008, 20, .	1.6	49
23	Nutrient transport and acquisition by diatom chains in a moving fluid. <i>Journal of Fluid Mechanics</i> , 2009, 638, 401-421.	1.4	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. <i>Chaos</i> , 2010, 20, 017511.	1.0	44
26	The role of mechanical resonance in the neural control of swimming in fishes. <i>Zoology</i> , 2014, 117, 48-56.	0.6	43
27	Rotational dynamics of a superhelix towed in a Stokes fluid. <i>Physics of Fluids</i> , 2007, 19, 103105.	1.6	41
28	Mathematical modeling of calcium signaling during sperm hyperactivation. <i>Molecular Human Reproduction</i> , 2011, 17, 500-510.	1.3	41
29	Swimming performance, resonance and shape evolution in heaving flexible panels. <i>Journal of Fluid Mechanics</i> , 2018, 847, 386-416.	1.4	41
30	Flexible filaments buckle into helicoidal shapes in strong compressional flows. <i>Nature Physics</i> , 2020, 16, 689-694.	6.5	41
31	Bistability in the synchronization of actuated microfilaments. <i>Journal of Fluid Mechanics</i> , 2018, 836, 304-323.	1.4	39
32	Hydrodynamics of diatom chains and semiflexible fibres. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140314.	1.5	38
33	The dynamics of sperm detachment from epithelium in a coupled fluid-biochemical model of hyperactivated motility. <i>Journal of Theoretical Biology</i> , 2014, 354, 81-94.	0.8	36
34	A fully three-dimensional model of the interaction of driven elastic filaments in a Stokes flow with applications to sperm motility. <i>Journal of Biomechanics</i> , 2015, 48, 1639-1651.	0.9	35
35	A Computational Model of the Fluid Dynamics of Undulatory and Flagellar Swimming. <i>American Zoologist</i> , 1996, 36, 599-607.	0.7	34
36	A Model of CatSper Channel Mediated Calcium Dynamics in Mammalian Spermatozoa. <i>Bulletin of Mathematical Biology</i> , 2010, 72, 1925-1946.	0.9	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. <i>Journal of Theoretical Biology</i> , 2015, 385, 119-129.	0.8	30
38	Peristaltic Pumping of Solid Particles Immersed in a Viscoelastic Fluid. <i>Mathematical Modelling of Natural Phenomena</i> , 2011, 6, 67-83.	0.9	28
39	Enhanced flagellar swimming through a compliant viscoelastic network in Stokes flow. <i>Journal of Fluid Mechanics</i> , 2016, 792, 775-797.	1.4	28
40	Hydrodynamic interactions of sheets vs filaments: Synchronization, attraction, and alignment. <i>Physics of Fluids</i> , 2015, 27, .	1.6	27
41	Sperm Motility and Multiciliary Beating: An Integrative Mechanical Model. <i>Computers and Mathematics With Applications</i> , 2006, 52, 749-758.	1.4	23
42	The role of curvature feedback in the energetics and dynamics of lamprey swimming: A closed-loop model. <i>PLoS Computational Biology</i> , 2018, 14, e1006324.	1.5	23
43	Shape oscillations of a droplet in an Oldroyd-B fluid. <i>Physica D: Nonlinear Phenomena</i> , 2011, 240, 1593-1601.	1.3	22
44	A model of Stokesian peristalsis and vesicle transport in a three-dimensional closed cavity. <i>Journal of Biomechanics</i> , 2015, 48, 1631-1638.	0.9	22
45	Complex dynamics of long, flexible fibers in shear. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2019, 269, 73-81.	1.0	20
46	Hydrodynamic effects of spines: A different spin. <i>Limnology & Oceanography Fluids & Environments</i> , 2011, 1, 110-119.	1.7	19
47	The action of waving cylindrical rings in a viscous fluid. <i>Journal of Fluid Mechanics</i> , 2011, 671, 574-586.	1.4	19
48	A Model for the Acrosome Reaction in Mammalian Sperm. <i>Bulletin of Mathematical Biology</i> , 2018, 80, 2481-2501.	0.9	18
49	Stokesian peristaltic pumping in a three-dimensional tube with a phase-shifted asymmetry. <i>Physics of Fluids</i> , 2011, 23, .	1.6	17
50	Effects of cell morphology and attachment to a surface on the hydrodynamic performance of unicellular choanoflagellates. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20180736.	1.5	17
51	Modeling viscoelastic networks in Stokes flow. <i>Physics of Fluids</i> , 2014, 26, .	1.6	16
52	Resilience of neural networks for locomotion. <i>Journal of Physiology</i> , 2021, 599, 3825-3840.	1.3	15
53	Regularized image system for Stokes flow outside a solid sphere. <i>Journal of Computational Physics</i> , 2016, 317, 165-184.	1.9	11
54	Evaluation of interfacial fluid dynamical stresses using the immersed boundary method. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2009, 11, 519-540.	0.5	11

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55	Computing Flows Around Microorganisms: Slender-Body Theory and Beyond. American Mathematical Monthly, 2014, 121, 810-823.	0.2	9
56	Mixing and pumping by pairs of helices in a viscous fluid. Physical Review E, 2018, 97, 023101.	0.8	9
57	Interaction of toroidal swimmers in Stokes flow. Physical Review E, 2017, 95, 043102.	0.8	8
58	Elastohydrodynamics of swimming helices: Effects of flexibility and confinement. Physical Review Fluids, 2019, 4, .	1.0	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 a polymeric cellular flow. Journal of Fluid Mechanics, 2017, 817, 388-405.	1.4	6
61	A Microscale Model of Microbial Transport in Porous Media. Water Science and Technology Library, 1994, , 441-448.	0.2	2
62	Error estimation for immersed interface solutions. Discrete and Continuous Dynamical Systems - Series B, 2012, 17, 1185-1203.	0.5	1
63	A Fluid-Structure Interaction Model of Ciliary Beating. The IMA Volumes in Mathematics and Its Applications, 2001, , 71-79.	0.5	1