

# Lisa J Fauci

## List of Publications by Citations

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64  
papers

3,020  
citations

29  
h-index

54  
g-index

65  
ext. papers

3,370  
ext. citations

3.6  
avg, IF

5.35  
L-index

#	Paper	IF	Citations
64	BIOFLUIDMECHANICS OF REPRODUCTION. <i>Annual Review of Fluid Mechanics</i> , <b>2006</b> , 38, 371-394	22	302
63	The method of regularized Stokeslets in three dimensions: Analysis, validation, and application to helical swimming. <i>Physics of Fluids</i> , <b>2005</b> , 17, 031504	4.4	263
62	A computational model of aquatic animal locomotion. <i>Journal of Computational Physics</i> , <b>1988</b> , 77, 85-108	4.1	240
61	Interactions between internal forces, body stiffness, and fluid environment in a neuromechanical model of lamprey swimming. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2010</b> , 107, 19832-7	11.5	194
60	Viscoelastic fluid response can increase the speed and efficiency of a free swimmer. <i>Physical Review Letters</i> , <b>2010</b> , 104, 038101	7.4	192
59	Sperm motility in the presence of boundaries. <i>Bulletin of Mathematical Biology</i> , <b>1995</b> , 57, 679-99	2.1	142
58	Modeling Biofilm Processes Using the Immersed Boundary Method. <i>Journal of Computational Physics</i> , <b>1996</b> , 129, 57-73	4.1	109
57	Interaction of oscillating filaments: A computational study. <i>Journal of Computational Physics</i> , <b>1990</b> , 86, 294-313	4.1	89
56	A microscale model of bacterial swimming, chemotaxis and substrate transport. <i>Journal of Theoretical Biology</i> , <b>1995</b> , 177, 325-40	2.3	71
55	An integrative model of internal axoneme mechanics and external fluid dynamics in ciliary beating. <i>Journal of Theoretical Biology</i> , <b>2000</b> , 207, 415-30	2.3	70
54	Truncated newton methods and the modeling of complex immersed elastic structures. <i>Communications on Pure and Applied Mathematics</i> , <b>1993</b> , 46, 787-818	2.5	63
53	A computational model of ameboid deformation and locomotion. <i>European Biophysics Journal</i> , <b>1998</b> , 27, 532-9	1.9	57
52	Simulation of swimming organisms: coupling internal mechanics with external fluid dynamics. <i>Computing in Science and Engineering</i> , <b>2004</b> , 6, 38-45	1.5	56
51	Modeling physiological resistance in bacterial biofilms. <i>Bulletin of Mathematical Biology</i> , <b>2005</b> , 67, 831-53	3.1	56
50	A computational model of the collective fluid dynamics of motile micro-organisms. <i>Journal of Fluid Mechanics</i> , <b>2002</b> , 455, 149-174	3.7	56
49	Fluid dynamic models of flagellar and ciliary beating. <i>Annals of the New York Academy of Sciences</i> , <b>2007</b> , 1101, 494-505	6.5	55
48	Coupling biochemistry and hydrodynamics captures hyperactivated sperm motility in a simple flagellar model. <i>Journal of Theoretical Biology</i> , <b>2011</b> , 283, 203-16	2.3	50

47	An integrative computational model of multiciliary beating. <i>Bulletin of Mathematical Biology</i> , <b>2008</b> , 70, 1192-215	2.1	49
46	Peristaltic pumping of solid particles. <i>Computers and Fluids</i> , <b>1992</b> , 21, 583-598	2.8	49
45	Peristaltic pumping and irreversibility of a Stokesian viscoelastic fluid. <i>Physics of Fluids</i> , <b>2008</b> , 20, 073101	4.4	44
44	Nutrient transport and acquisition by diatom chains in a moving fluid. <i>Journal of Fluid Mechanics</i> , <b>2009</b> , 638, 401-421	3.7	40
43	A computational model of the mechanics of growth of the villous trophoblast bilayer. <i>Bulletin of Mathematical Biology</i> , <b>2004</b> , 66, 199-232	2.1	40
42	Rotational dynamics of a superhelix towed in a Stokes fluid. <i>Physics of Fluids</i> , <b>2007</b> , 19, 103105	4.4	37
41	Using Lagrangian coherent structures to analyze fluid mixing by cilia. <i>Chaos</i> , <b>2010</b> , 20, 017511	3.3	36
40	Role of body stiffness in undulatory swimming: Insights from robotic and computational models. <i>Physical Review Fluids</i> , <b>2016</b> , 1,	2.8	36
39	A microscale model of bacterial and biofilm dynamics in porous media <b>2000</b> , 68, 536-547		35
38	Mathematical modeling of calcium signaling during sperm hyperactivation. <i>Molecular Human Reproduction</i> , <b>2011</b> , 17, 500-10	4.4	32
37	The dynamics of sperm detachment from epithelium in a coupled fluid-biochemical model of hyperactivated motility. <i>Journal of Theoretical Biology</i> , <b>2014</b> , 354, 81-94	2.3	30
36	The role of mechanical resonance in the neural control of swimming in fishes. <i>Zoology</i> , <b>2014</b> , 117, 48-56	1.7	30
35	A model of CatSper channel mediated calcium dynamics in mammalian spermatozoa. <i>Bulletin of Mathematical Biology</i> , <b>2010</b> , 72, 1925-46	2.1	28
34	Hydrodynamics of diatom chains and semiflexible fibres. <i>Journal of the Royal Society Interface</i> , <b>2014</b> , 11, 20140314	4.1	27
33	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> , <b>2015</b> , 48, 1639-51	2.9	26
32	Enhanced flagellar swimming through a compliant viscoelastic network in Stokes flow. <i>Journal of Fluid Mechanics</i> , <b>2016</b> , 792, 775-797	3.7	25
31	Swimming performance, resonance and shape evolution in heaving flexible panels. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 847, 386-416	3.7	25
30	Bistability in the synchronization of actuated microfilaments. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 836, 304-323	3.7	24

29	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> , <b>2015</b> , 385, 119-29	2.3	22
28	Peristaltic Pumping of Solid Particles Immersed in a Viscoelastic Fluid. <i>Mathematical Modelling of Natural Phenomena</i> , <b>2011</b> , 6, 67-83	3	22
27	Sperm Motility and Multiciliary Beating: An Integrative Mechanical Model. <i>Computers and Mathematics With Applications</i> , <b>2006</b> , 52, 749-758	2.7	22
26	A Computational Model of the Fluid Dynamics of Undulatory and Flagellar Swimming. <i>American Zoologist</i> , <b>1996</b> , 36, 599-607		22
25	A model of Stokesian peristalsis and vesicle transport in a three-dimensional closed cavity. <i>Journal of Biomechanics</i> , <b>2015</b> , 48, 1631-8	2.9	20
24	Hydrodynamic interactions of sheets vs filaments: Synchronization, attraction, and alignment. <i>Physics of Fluids</i> , <b>2015</b> , 27, 121901	4.4	20
23	Shape oscillations of a droplet in an Oldroyd-B fluid. <i>Physica D: Nonlinear Phenomena</i> , <b>2011</b> , 240, 1593-1601	5.3	20
22	Flexible filaments buckle into helicoidal shapes in strong compressional flows. <i>Nature Physics</i> , <b>2020</b> , 16, 689-694	16.2	17
21	Hydrodynamic effects of spines: A different spin. <i>Limnology &amp; Oceanography Fluids &amp; Environments</i> , <b>2011</b> , 1, 110-119		17
20	The action of waving cylindrical rings in a viscous fluid. <i>Journal of Fluid Mechanics</i> , <b>2011</b> , 671, 574-586	3.7	17
19	Stokesian peristaltic pumping in a three-dimensional tube with a phase-shifted asymmetry. <i>Physics of Fluids</i> , <b>2011</b> , 23, 081901	4.4	15
18	Complex dynamics of long, flexible fibers in shear. <i>Journal of Non-Newtonian Fluid Mechanics</i> , <b>2019</b> , 269, 73-81	2.7	14
17	Computational modeling of the swimming of biflagellated algal cells. <i>Contemporary Mathematics</i> , <b>1993</b> , 91-102	1.6	14
16	The role of curvature feedback in the energetics and dynamics of lamprey swimming: A closed-loop model. <i>PLoS Computational Biology</i> , <b>2018</b> , 14, e1006324	5	12
15	Modeling viscoelastic networks in Stokes flow. <i>Physics of Fluids</i> , <b>2014</b> , 26, 113102	4.4	11
14	EVALUATION OF INTERFACIAL FLUID DYNAMICAL STRESSES USING THE IMMERSSED BOUNDARY METHOD. <i>Discrete and Continuous Dynamical Systems - Series B</i> , <b>2009</b> , 11, 519-540	1.3	10
13	Regularized image system for Stokes flow outside a solid sphere. <i>Journal of Computational Physics</i> , <b>2016</b> , 317, 165-184	4.1	10
12	A Model for the Acrosome Reaction in Mammalian Sperm. <i>Bulletin of Mathematical Biology</i> , <b>2018</b> , 80, 2481-2501	2.1	9

11	Effects of cell morphology and attachment to a surface on the hydrodynamic performance of unicellular choanoflagellates. <i>Journal of the Royal Society Interface</i> , <b>2019</b> , 16, 20180736	4.1	8
10	Interaction of toroidal swimmers in Stokes flow. <i>Physical Review E</i> , <b>2017</b> , 95, 043102	2.4	7
9	Mixing and pumping by pairs of helices in a viscous fluid. <i>Physical Review E</i> , <b>2018</b> , 97, 023101	2.4	7
8	Computing Flows Around Microorganisms: Slender-Body Theory and Beyond. <i>American Mathematical Monthly</i> , <b>2014</b> , 121, 810	0.3	6
7	Elastohydrodynamics of swimming helices: Effects of flexibility and confinement. <i>Physical Review Fluids</i> , <b>2019</b> , 4,	2.8	6
6	Flow Induced by Bacterial Carpets and Transport of Microscale Loads. <i>The IMA Volumes in Mathematics and Its Applications</i> , <b>2015</b> , 35-53	0.5	5
5	Dynamics of a macroscopic elastic fibre in a polymeric cellular flow. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 817, 388-405	3.7	4
4	A Microscale Model of Microbial Transport in Porous Media. <i>Water Science and Technology Library</i> , <b>1994</b> , 441-448	0.3	2
3	Resilience of neural networks for locomotion. <i>Journal of Physiology</i> , <b>2021</b> , 599, 3825-3840	3.9	2
2	Error estimation for immersed interface solutions. <i>Discrete and Continuous Dynamical Systems - Series B</i> , <b>2012</b> , 17, 1185-1203	1.3	1
1	A Fluid-Structure Interaction Model of Ciliary Beating. <i>The IMA Volumes in Mathematics and Its Applications</i> , <b>2001</b> , 71-79	0.5	