Aaron L Fogelson

List of Publications by Year
in descending order

79	3,260	172457 29	149698 56
papers	citations	h-index	g-index

81	81	81	2238
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Surface-Mediated Control of Blood Coagulation: The Role of Binding Site Densities and Platelet Deposition. Biophysical Journal, 2001, 80, 1050-1074.	0.5	271
2	Fluid Mechanics of Blood Clot Formation. Annual Review of Fluid Mechanics, 2015, 47, 377-403.	25.0	226
3	Grow with the flow: a spatial-temporal model of platelet deposition and blood coagulation under flow. Mathematical Medicine and Biology, 2011, 28, 47-84.	1.2	204
4	A mathematical model and numerical method for studying platelet adhesion and aggregation during blood clotting. Journal of Computational Physics, 1984, 56, 111-134.	3.8	150
5	Immersed-boundary-type models of intravascular platelet aggregation. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2087-2104.	6.6	133
6	A fast numerical method for solving the three-dimensional stokes' equations in the presence of suspended particles. Journal of Computational Physics, 1988, 79, 50-69.	3.8	128
7	Modeling Biofilm Processes Using the Immersed Boundary Method. Journal of Computational Physics, 1996, 129, 57-73.	3.8	121
8	Continuum Models of Platelet Aggregation: Formulation and Mechanical Properties. SIAM Journal on Applied Mathematics, 1992, 52, 1089-1110.	1.8	116
9	A Radial Basis Function (RBF)-Finite Difference (FD) Method for Diffusion and Reactionâ€"Diffusion Equations on Surfaces. Journal of Scientific Computing, 2015, 63, 745-768.	2.3	114
10	Coagulation under Flow: The Influence of Flow-Mediated Transport on the Initiation and Inhibition of Coagulation. Pathophysiology of Haemostasis and Thrombosis: International Journal on Haemostasis and Thrombosis Research, 2005, 34, 91-108.	0.3	105
11	Elevated hematocrit enhances platelet accumulation following vascular injury. Blood, 2017, 129, 2537-2546.	1.4	90
12	Unconditionally stable discretizations of the immersed boundary equations. Journal of Computational Physics, 2007, 222, 702-719.	3.8	89
13	Computational model of whole blood exhibiting lateral platelet motion induced by red blood cells. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 471-487.	2.1	88
14	Truncated newton methods and the modeling of complex immersed elastic structures. Communications on Pure and Applied Mathematics, 1993, 46, 787-818.	3.1	74
15	The Influence of Hindered Transport on the Development of Platelet Thrombi Under Flow. Bulletin of Mathematical Biology, 2013, 75, 1255-1283.	1.9	72
16	Immersed Interface Methods for Neumann and Related Problems in Two and Three Dimensions. SIAM Journal of Scientific Computing, 2001, 22, 1630-1654.	2.8	65
17	Fibrin gel formation in a shear flow. Mathematical Medicine and Biology, 2007, 24, 111-130.	1.2	65
18	Computational Methods for Continuum Models of Platelet Aggregation. Journal of Computational Physics, 1999, 151, 649-675.	3.8	62

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19	Blood Clot Formation under Flow: The Importance of Factor XI Depends Strongly on Platelet Count. Biophysical Journal, 2012, 102, 10-18.	0.5	62
20	Platelet Motion near a Vessel Wall or Thrombus Surface in Two-Dimensional Whole Blood Simulations. Biophysical Journal, 2013, 104, 1764-1772.	0.5	58
21	The Effect of Factor VIII Deficiencies and Replacement and Bypass Therapies on Thrombus Formation under Venous Flow Conditions in Microfluidic and Computational Models. PLoS ONE, 2013, 8, e78732.	2.5	50
22	Molecular and Physical Mechanisms of Fibrinolysis and Thrombolysis from Mathematical Modeling and Experiments. Scientific Reports, 2017, 7, 6914.	3.3	48
23	An overview of mathematical modeling of thrombus formation under flow. Thrombosis Research, 2014, 133, S12-S14.	1.7	47
24	Hyperviscosity-based stabilization for radial basis function-finite difference (RBF-FD) discretizations of advectionâ€"diffusion equations. Journal of Computational Physics, 2018, 372, 616-639.	3.8	47
25	A local and global sensitivity analysis of a mathematical model of coagulation and platelet deposition under flow. PLoS ONE, 2018, 13, e0200917.	2.5	45
26	Modelling fibrinolysis: a 3D stochastic multiscale model. Mathematical Medicine and Biology, 2014, 31, 17-44.	1.2	42
27	Toward an understanding of fibrin branching structure. Physical Review E, 2010, 81, 051922.	2.1	41
28	Platelet-wall interactions in continuum models of platelet thrombosis: formulation and numerical solution. Mathematical Medicine and Biology, 2004, 21, 293-334.	1.2	40
29	Robust Node Generation for Mesh-free Discretizations on Irregular Domains and Surfaces. SIAM Journal of Scientific Computing, 2018, 40, A2584-A2608.	2.8	31
30	A radial basis function (RBF) finite difference method for the simulation of reactionâ€"diffusion equations on stationary platelets within the augmented forcing method. International Journal for Numerical Methods in Fluids, 2014, 75, 1-22.	1.6	30
31	A comparison of implicit solvers for the immersed boundary equations. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2290-2304.	6.6	27
32	A Mathematical Study of Volume Shifts and Ionic Concentration Changes during Ischemia and Hypoxia. Journal of Theoretical Biology, 2003, 220, 83-106.	1.7	25
33	Stability of approximate projection methods on cell-centered grids. Journal of Computational Physics, 2005, 203, 517-538.	3.8	25
34	Kinetics of Swelling Gels. SIAM Journal on Applied Mathematics, 2011, 71, 854-875.	1.8	22
35	A mathematical model of coagulation under flow identifies factor V as a modifier of thrombin generation in hemophilia A. Journal of Thrombosis and Haemostasis, 2020, 18, 306-317.	3.8	22
36	A Mathematical Model of Venous Thrombosis Initiation. Biophysical Journal, 2016, 111, 2722-2734.	0.5	21

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37	An Efficient and Robust Method for Simulating Two-Phase Gel Dynamics. SIAM Journal of Scientific Computing, 2008, 30, 2535-2565.	2.8	20
38	The effects of spatial inhomogeneities on flow through the endothelial surface layer. Journal of Theoretical Biology, 2008, 252, 313-325.	1.7	19
39	A study of different modeling choices for simulating platelets within the immersed boundary method. Applied Numerical Mathematics, 2013, 63, 58-77.	2.1	19
40	Membrane Binding-site Density Can Modulate Activation Thresholds in Enzyme Systems. Journal of Theoretical Biology, 1998, 193, 1-18.	1.7	17
41	Particle-method solution of two-dimensional convection-diffusion equations. Journal of Computational Physics, 1992, 100, 1-16.	3.8	16
42	A Two-phase mixture model of platelet aggregation. Mathematical Medicine and Biology, 2018, 35, 225-256.	1.2	16
43	Clot Permeability, Agonist Transport, and Platelet Binding Kinetics in Arterial Thrombosis. Biophysical Journal, 2020, 119, 2102-2115.	0.5	16
44	MARS: An Analytic Framework of Interface Tracking via Mapping and Adjusting Regular Semialgebraic Sets. SIAM Journal on Numerical Analysis, 2016, 54, 530-560.	2.3	15
45	A physics-based model for maintenance of the pH gradient in the gastric mucus layer. American Journal of Physiology - Renal Physiology, 2017, 313, G599-G612.	3.4	15
46	Fourth-Order Interface Tracking in Two Dimensions via an Improved Polygonal Area Mapping Method. SIAM Journal of Scientific Computing, 2014, 36, A2369-A2400.	2.8	14
47	Low-Reynolds-number swimming in viscous two-phase fluids. Physical Review E, 2012, 85, 036304.	2.1	13
48	Synergy Between Tissue Factor and Exogenous Factor XIa in Initiating Coagulation. Arteriosclerosis, Thrombosis, and Vascular Biology, 2016, 36, 2334-2345.	2.4	13
49	Modelling fibrinolysis: 1D continuum models. Mathematical Medicine and Biology, 2014, 31, 45-64.	1.2	12
50	An immersed boundary method for two-fluid mixtures. Journal of Computational Physics, 2014, 262, 231-243.	3.8	11
51	Augmenting the immersed boundary method with Radial Basis Functions (RBFs) for the modeling of platelets in hemodynamic flows. International Journal for Numerical Methods in Fluids, 2015, 79, 536-557.	1.6	11
52	Electrodiffusion-Mediated Swelling of a Two-Phase Gel Model of Gastric Mucus. Gels, 2018, 4, 76.	4.5	11
53	The Art and Science of Building a Computational Model to Understand Hemostasis. Seminars in Thrombosis and Hemostasis, 2021, 47, 129-138.	2.7	11
54	Computational Modeling of Blood Clotting: Coagulation and Three-dimensional Platelet Aggregation. , 2003, , 145-154.		9

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55	A wave propagation algorithm for viscoelastic fluids with spatially and temporally varying properties. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2250-2264.	6.6	9
56	Simulations of chemical transport and reaction in a suspension of cells I: an augmented forcing point method for the stationary case. International Journal for Numerical Methods in Fluids, 2012, 69, 1736-1752.	1.6	9
57	Optimal Smoothing in Function-Transport Particle Methods for Diffusion Problems. Journal of Computational Physics, 1993, 109, 155-163.	3.8	8
58	A high-resolution finite-difference method for simulating two-fluid, viscoelastic gel dynamics. Journal of Non-Newtonian Fluid Mechanics, 2011, 166, 1137-1157.	2.4	8
59	An Interface-Capturing Regularization Method for Solving the Equations for Two-Fluid Mixtures. Communications in Computational Physics, 2013, 14, 1322-1346.	1.7	7
60	Kinetic model of two-monomer polymerization. Physical Review E, 2020, 101, 022501.	2.1	7
61	Computational investigation of platelet thrombus mechanics and stability in stenotic channels. Journal of Biomechanics, 2021, 122, 110398.	2.1	7
62	A Mathematical Model of Platelet Aggregation in an Extravascular Injury Under Flow. Multiscale Modeling and Simulation, 2020, 18, 1489-1524.	1.6	7
63	A hybrid semi-Lagrangian cut cell method for advection-diffusion problems with Robin boundary conditions in moving domains. Journal of Computational Physics, 2022, 449, 110805.	3.8	7
64	Probabilistic modeling of platelet aggregation: effects of activation time and receptor occupancy. Journal of Theoretical Biology, 2002, 219, 33-53.	1.7	7
65	Cell-based Models of Blood Clotting. , 2007, , 243-269.		6
66	Effects of elapsed time on downstream platelet adhesion following transient exposure to elevated upstream shear forces. Colloids and Surfaces B: Biointerfaces, 2020, 193, 111118.	5.0	6
67	An efficient high-order meshless method for advection-diffusion equations on time-varying irregular domains. Journal of Computational Physics, 2021, 445, 110633.	3.8	6
68	A Framework for Exploring the Post-gelation Behavior of Ziff and Stell's Polymerization Models. SIAM Journal on Applied Mathematics, 2015, 75, 1346-1368.	1.8	5
69	Pump efficacy in a two-dimensional, fluidâ€"structure interaction model of a chain of contracting lymphangions. Biomechanics and Modeling in Mechanobiology, 2021, 20, 1941-1968.	2.8	5
70	Modeling and Simulation of the Ion-Binding-Mediated Swelling Dynamics of Mucin-like Polyelectrolyte Gels. Gels, 2021, 7, 244.	4.5	5
71	Functional assay of antiplatelet drugs based on margination of platelets in flowing blood. Biointerphases, 2016, 11, 029805.	1.6	4
72	Eulerian--Lagrangian Treatment of Nondilute Two-Phase Gels. SIAM Journal on Applied Mathematics, 2016, 76, 341-367.	1.8	4

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73	Computationally Driven Discovery in Coagulation. Arteriosclerosis, Thrombosis, and Vascular Biology, 2021, 41, 79-86.	2.4	4
74	Development of Fibrin Branch Structure Before and After Gelation. SIAM Journal on Applied Mathematics, 2022, 82, 267-293.	1.8	4
75	Activation waves in a model of platelet aggregation: existence of solutions and stability of travelling fronts. Journal of Mathematical Biology, 1993, 31, 675-701.	1.9	3
76	A parallel computational method for simulating twoâ€phase gel dynamics on a staggered grid. International Journal for Numerical Methods in Fluids, 2009, 60, 633-649.	1.6	3
77	A Cartesian grid method for twoâ€phase gel dynamics on an irregular domain. International Journal for Numerical Methods in Fluids, 2011, 67, 1799-1817.	1.6	3
78	Modeling of Blood Clotting. , 2015, , 925-931.		0
79	A fine-grained parallelization of the immersed boundary method. International Journal of High Performance Computing Applications, 0, , 109434202210835.	3.7	0