James A Glazier

List of Publications by Year
in descending order

#	Article	IF	Citations
1	Simulation of biological cell sorting using a two-dimensional extended Potts model. Physical Review Letters, 1992, 69, 2013-2016.	7.8	1,117
2	Simulation of the differential adhesion driven rearrangement of biological cells. Physical Review E, 1993, 47, 2128-2154.	2.1	671
3	Multi-Scale Modeling of Tissues Using CompuCell3D. Methods in Cell Biology, 2012, 110, 325-366.	1.1	415
4	Cell sorting is analogous to phase ordering in fluids. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 9467-9471.	7.1	238
5	3D Multi-Cell Simulation of Tumor Growth and Angiogenesis. PLoS ONE, 2009, 4, e7190.	2.5	235
6	Anomalous diffusion and non-Gaussian velocity distribution of Hydra cells in cellular aggregates. Physica A: Statistical Mechanics and Its Applications, 2001, 293, 549-558.	2.6	228
7	Dynamics of two-dimensional soap froths. Physical Review A, 1987, 36, 306-312.	2.5	224
8	Cell elongation is key to in silico replication of in vitro vasculogenesis and subsequent remodeling. Developmental Biology, 2006, 289, 44-54.	2.0	213
9	A cell-centered approach to developmental biology. Physica A: Statistical Mechanics and Its Applications, 2005, 352, 113-130.	2.6	201
10	Contact-Inhibited Chemotaxis in De Novo and Sprouting Blood-Vessel Growth. PLoS Computational Biology, 2008, 4, e1000163.	3.2	185
11	Soap froth revisited: Dynamic scaling in the two-dimensional froth. Physical Review Letters, 1989, 62, 1318-1321.	7.8	184
12	The kinetics of cellular patterns. Journal of Physics Condensed Matter, 1992, 4, 1867-1894.	1.8	179
13	Effects of lattice anisotropy and temperature on domain growth in the two-dimensional Potts model. Physical Review A, 1991, 43, 2662-2668.	2.5	169
14	Coarsening in the two-dimensional soap froth and the large-<i>Q</i>Potts model: A detailed comparison. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1990, 62, 615-645.	0.6	148
15	The 2019 mathematical oncology roadmap. Physical Biology, 2019, 16, 041005.	1.8	147
16	Evidence against â€˜ultrahardâ€™ thermal turbulence at very high Rayleigh numbers. Nature, 1999, 398, 307-310.	27.8	138
17	Quantitative Comparison between Differential Adhesion Models and Cell Sorting in the Presence and Absence of Fluctuations. Physical Review Letters, 1995, 75, 2244-2247.	7.8	132
18	libRoadRunner: a high performance SBML simulation and analysis library. Bioinformatics, 2015, 31, 3315-3321.	4.1	130

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19	Somites Without a Clock. Science, 2014, 343, 791-795.	12.6	125
20	Dynamical mechanisms for skeletal pattern formation in the vertebrate limb. Proceedings of the Royal Society B: Biological Sciences, 2004, 271, 1713-1722.	2.6	124
21	Thermal Turbulence in Mercury. Physical Review Letters, 1996, 76, 1465-1468.	7.8	118
22	On multiscale approaches to three-dimensional modelling of morphogenesis. Journal of the Royal Society Interface, 2005, 2, 237-253.	3.4	118
23	Grain growth in three dimensions depends on grain topology. Physical Review Letters, 1993, 70, 2170-2173.	7.8	115
24	Simulating convergent extension by way of anisotropic differential adhesion. Journal of Theoretical Biology, 2003, 222, 247-259.	1.7	111
25	Cell movement during chick primitive streak formation. Developmental Biology, 2006, 296, 137-149.	2.0	108
26	Single Cell Motion in Aggregates of Embryonic Cells. Physical Review Letters, 1996, 76, 3032-3035.	7.8	107
27	A Multi-cell, Multi-scale Model of Vertebrate Segmentation and Somite Formation. PLoS Computational Biology, 2011, 7, e1002155.	3.2	106
28	Global fractal dimension of human DNA sequences treated as pseudorandom walks. Physical Review A, 1992, 45, 8902-8913.	2.5	104
29	Diffusion and Deformations of Single Hydra Cells in Cellular Aggregates. Biophysical Journal, 2000, 79, 1903-1914.	0.5	103
30	A Framework for Three-Dimensional Simulation of Morphogenesis. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2005, 2, 273-288.	3.0	101
31	Improving the realism of the cellular Potts model in simulations of biological cells. Physica A: Statistical Mechanics and Its Applications, 2003, 329, 451-458.	2.6	100
32	A parallel implementation of the Cellular Potts Model for simulation of cell-based morphogenesis. Computer Physics Communications, 2007, 176, 670-681.	7.5	100
33	Possible Cooperation of Differential Adhesion and Chemotaxis in Mound Formation of Dictyostelium. Biophysical Journal, 1998, 75, 2615-2625.	0.5	80
34	Analysis of tissue flow patterns during primitive streak formation in the chick embryo. Developmental Biology, 2005, 284, 37-47.	2.0	79
35	Dispersive chaos in one-dimensional traveling-wave convection. Physical Review Letters, 1990, 65, 1579-1582.	7.8	77
36	Hysteresis and avalanches in two-dimensional foam rheology simulations. Physical Review E, 1999, 59, 5819-5832.	2.1	77

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37	Model of Convergent Extension in Animal Morphogenesis. Physical Review Letters, 2000, 85, 2022-2025.	7.8	76
38	Using digital twins in viral infection. Science, 2021, 371, 1105-1106.	12.6	73
39	Dynamic mechanisms of blood vessel growth. Nonlinearity, 2006, 19, C1-C10.	1.4	72
40	Magnetic Resonance Images of Coarsening Inside a Foam. Physical Review Letters, 1995, 75, 573-576.	7.8	71
41	Interplay between activatorâ€"inhibitor coupling and cell-matrix adhesion in a cellular automaton model for chondrogenic patterning. Developmental Biology, 2004, 271, 372-387.	2.0	66
42	Structure of Arnold tongues and the f(Î±) spectrum for period doubling: Experimental results. Physical Review A, 1986, 34, 1621-1624.	2.5	63
43	Experimental Growth Law for Bubbles in a Moderately â€œWetâ€•3D Liquid Foam. Physical Review Letters, 2007, 99, 058304.	7.8	63
44	Modeling Gastrulation in the Chick Embryo: Formation of the Primitive Streak. PLoS ONE, 2010, 5, e10571.	2.5	63
45	Extraction of relevant physical parameters from 3D images of foams obtained by X-ray tomography. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 263, 295-302.	4.7	61
46	From Genes to Organisms Via the Cell: A Problem-Solving Environment for Multicellular Development. Computing in Science and Engineering, 2007, 9, 50-60.	1.2	61
47	Computer Simulations of Cell Sorting Due to Differential Adhesion. PLoS ONE, 2011, 6, e24999.	2.5	61
48	Coarsening Foams Robustly Reach a Self-Similar Growth Regime. Physical Review Letters, 2010, 104, 248304.	7.8	60
49	Adhesion between cells, diffusion of growth factors, and elasticity of the AER produce the paddle shape of the chick limb. Physica A: Statistical Mechanics and Its Applications, 2007, 373, 521-532.	2.6	59
50	Nonideal effects in the two-dimensional soap froth. Physical Review A, 1989, 40, 7398-7401.	2.5	54
51	Magnetization to Morphogenesis: A Brief History of the Glazier-Graner-Hogeweg Model. , 2007, , 79-106.		54
52	Multicell Simulations of Development and Disease Using the CompuCell3D Simulation Environment. Methods in Molecular Biology, 2009, 500, 361-428.	0.9	53
53	A texture tensor to quantify deformations: the example of two-dimensional flowing foams. Granular Matter, 2003, 5, 71-74.	2.2	52
54	Front Instabilities and Invasiveness of Simulated Avascular Tumors. Bulletin of Mathematical Biology, 2009, 71, 1189-1227.	1.9	49

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55	A texture tensor to quantify deformations. Granular Matter, 2003, 5, 67-70.	2.2	48
56	The rheology of two-dimensional foams. Rheologica Acta, 2004, 43, 442-448.	2.4	44
57	A Notch positive feedback in the intestinal stem cell niche is essential for stem cell selfâ€renewal. Molecular Systems Biology, 2017, 13, 927.	7.2	44
58	A Liver-Centric Multiscale Modeling Framework for Xenobiotics. PLoS ONE, 2016, 11, e0162428.	2.5	44
59	Spatially Coherent States in Fractally Coupled Map Lattices. Physical Review Letters, 1995, 74, 3297-3300.	7.8	43
60	Compact Microfluidic Structures for Generating Spatial and Temporal Gradients. Analytical Chemistry, 2007, 79, 9471-9477.	6.5	43
61	Simulation of single-species bacterial-biofilm growth using the Glazier-Graner-Hogeweg model and the CompuCell3D modeling environment. Mathematical Biosciences and Engineering, 2008, 5, 355-388.	1.9	43
62	Building digital twins of the human immune system: toward a roadmap. Npj Digital Medicine, 2022, 5, .	10.9	43
63	A modular framework for multiscale, multicellular, spatiotemporal modeling of acute primary viral infection and immune response in epithelial tissues and its application to drug therapy timing and effectiveness. PLoS Computational Biology, 2020, 16, e1008451.	3.2	40
64	Adhesion Failures Determine the Pattern of Choroidal Neovascularization in the Eye: A Computer Simulation Study. PLoS Computational Biology, 2012, 8, e1002440.	3.2	39
65	The cell behavior ontology: describing the intrinsic biological behaviors of real and model cells seen as active agents. Bioinformatics, 2014, 30, 2367-2374.	4.1	35
66	Virtual-tissue computer simulations define the roles of cell adhesion and proliferation in the onset of kidney cystic disease. Molecular Biology of the Cell, 2016, 27, 3673-3685.	2.1	35
67	Dispersive chaos. Journal of Statistical Physics, 1991, 64, 945-960.	1.2	33
68	Non-Turing stripes and spots: a novel mechanism for biological cell clustering. Physica A: Statistical Mechanics and Its Applications, 2004, 341, 482-494.	2.6	33
69	Emergent Stratification in Solid Tumors Selects for Reduced Cohesion of Tumor Cells: A Multi-Cell, Virtual-Tissue Model of Tumor Evolution Using CompuCell3D. PLoS ONE, 2015, 10, e0127972.	2.5	32
70	Effective multifractal spectrum of a random walk. Physical Review E, 1994, 49, 1860-1864.	2.1	31
71	Solving the advection-diffusion equations in biological contexts using the cellular Potts model. Physical Review E, 2005, 72, 041909.	2.1	31
72	Coordinated Action of N-CAM, N-cadherin, EphA4, and ephrinB2 Translates Genetic Prepatterns into Structure during Somitogenesis in Chick. Current Topics in Developmental Biology, 2008, 81, 205-247.	2.2	31

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73	Front Instabilities and Invasiveness of Simulated 3D Avascular Tumors. PLoS ONE, 2010, 5, e10641.	2.5	31
74	Interactions of nonlinear pulses in convection in binary fluids. Physical Review A, 1991, 43, 4269-4280.	2.5	30
75	Fabricating microfluidic valve master molds in SU-8 photoresist. Journal of Micromechanics and Microengineering, 2014, 24, 057001.	2.6	29
76	Cell-Oriented Modeling of In Vitro Capillary Development. Lecture Notes in Computer Science, 2004, , 425-434.	1.3	29
77	f(Î±) curves: Experimental results. Physical Review A, 1988, 37, 523-530.	2.5	28
78	Relation between volume, number of faces and three-dimensional growth laws in coarsening cellular patterns. Philosophical Magazine Letters, 1993, 68, 363-365.	1.2	28
79	The Glazier-Graner-Hogeweg Model: Extensions, Future Directions, and Opportunities for Further Study. , 2007, , 151-167.		28
80	Transcriptome analysis reveals manifold mechanisms of cyst development in ADPKD. Human Genomics, 2016, 10, 37.	2.9	28
81	Modeling of xenobiotic transport and metabolism in virtual hepatic lobule models. PLoS ONE, 2018, 13, e0198060.	2.5	28
82	Learning Everywhere: Pervasive Machine Learning for Effective High-Performance Computation. , 2019, , .		28
83	Reconstructing phylogeny from the multifractal spectrum of mitochondrial DNA. Physical Review E, 1995, 51, 2665-2668.	2.1	27
84	Bulk elastic properties of chicken embryos during somitogenesis. BioMedical Engineering OnLine, 2010, 9, 19.	2.7	27
85	Viscous instabilities in flowing foams: a Cellular Potts Model approach. Journal of Statistical Mechanics: Theory and Experiment, 2006, 2006, P10008-P10008.	2.3	26
86	Computer Simulation of Cellular Patterning Within the Drosophila Pupal Eye. PLoS Computational Biology, 2010, 6, e1000841.	3.2	26
87	Microfluidic Devices Integrating Microcavity Surface-Plasmon-Resonance Sensors: Glucose Oxidase Binding-Activity Detection. Analytical Chemistry, 2010, 82, 343-352.	6.5	25
88	Interaction of localized pulses of traveling-wave convection with propagating disturbances. Physical Review A, 1990, 42, 7504-7506.	2.5	24
89	Progression of Diabetic Capillary Occlusion: A Model. PLoS Computational Biology, 2016, 12, e1004932.	3.2	24
90	Filopodial-Tension Model of Convergent-Extension of Tissues. PLoS Computational Biology, 2016, 12, e1004952.	3.2	24

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91	Grain growth from homogeneous initial conditions: Anomalous grain growth and special scaling states. Physical Review E, 1995, 52, R3333-R3336.	2.1	23
92	Three-dimensional magnetic resonance imaging of a liquid foam. Journal of Physics Condensed Matter, 1995, 7, L511-L516.	1.8	23
93	CompuCell3D Simulations Reproduce Mesenchymal Cell Migration on Flat Substrates. Biophysical Journal, 2020, 118, 2801-2815.	0.5	20
94	The fractal structure of the mitochondrial genomes. Physica A: Statistical Mechanics and Its Applications, 2002, 311, 221-230.	2.6	17
95	Trajectory Scaling Functions at the Onset of Chaos: Experimental Results. Physical Review Letters, 1988, 61, 539-542.	7.8	16
96	Self-Similar Mitochondrial DNA. Cell Biochemistry and Biophysics, 2004, 41, 041-062.	1.8	14
97	Generation of multicellular spatiotemporal models of population dynamics from ordinary differential equations, with applications in viral infection. BMC Biology, 2021, 19, 196.	3.8	11
98	3D simulations of wet foam coarsening evidence a self similar growth regime. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2015, 473, 109-114.	4.7	10
99	A simple automated method for continuous fieldwise measurement of microvascular hemodynamics. Microvascular Research, 2019, 123, 7-13.	2.5	10
100	A mechanical model of early somite segmentation. IScience, 2021, 24, 102317.	4.1	10
101	Addressing <i>barriers in comprehensiveness, accessibility, reusability, interoperability and reproducibility of computational models in systems biology</i>. Briefings in Bioinformatics, 2022, 23, .	6.5	10
102	Molecular jenga: the percolation phase transition (collapse) in virus capsids. Physical Biology, 2018, 15, 056005.	1.8	9
103	A computational model of liver tissue damage and repair. PLoS ONE, 2020, 15, e0243451.	2.5	9
104	3D quantitative analyses of angiogenic sprout growth dynamics. Developmental Dynamics, 2013, 242, 518-526.	1.8	8
105	Advancing therapies for viral infections using mechanistic computational models of the dynamic interplay between the virus and host immune response. Current Opinion in Virology, 2021, 50, 103-109.	5.4	8
106	Multicellular spatial model of RNA virus replication and interferon responses reveals factors controlling plaque growth dynamics. PLoS Computational Biology, 2021, 17, e1008874.	3.2	8
107	Multiscale Model of Antiviral Timing, Potency, and Heterogeneity Effects on an Epithelial Tissue Patch Infected by SARS-CoV-2. Viruses, 2022, 14, 605.	3.3	8
108	Parameterizing cell movement when the instantaneous cell migration velocity is ill-defined. Physica A: Statistical Mechanics and Its Applications, 2020, 550, 124493.	2.6	7

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109	Mitochondrial depolarization and repolarization in the early stages of acetaminophen hepatotoxicity in mice. Toxicology, 2020, 439, 152464.	4.2	7
110	A multiscale multicellular spatiotemporal model of local influenza infection and immune response. Journal of Theoretical Biology, 2022, 532, 110918.	1.7	7
111	Spatial Temporal Analysis of Fieldwise Flow in Microvasculature. Journal of Visualized Experiments, 2019, , .	0.3	6
112	A Parallel Implementation of the Cellular Potts Model for Simulation of Cell-Based Morphogenesis. Lecture Notes in Computer Science, 2006, , 58-67.	1.3	6
113	Dynamics and topological aspects of a reconstructed two-dimensional foam time series using Potts Model on a pinned lattice. Journal of Computational Physics, 2003, 192, 1-20.	3.8	5
114	Label-Free Microcavity Biosensors: Steps towards Personalized Medicine. Sensors, 2012, 12, 17262-17294.	3.8	5
115	Factors Mediating Learning and Application of Computational Modeling by Life Scientists. , 2018, , .		5
116	Development of a coupled simulation toolkit for computational radiation biology based on Geant4 and CompuCell3D. Physics in Medicine and Biology, 2021, 66, 045026.	3.0	5
117	Construction of candidate minimal-area space-filling partitions. Philosophical Magazine Letters, 1994, 70, 351-356.	1.2	4
118	A Computational Model of Peripheral Photocoagulation for the Prevention of Progressive Diabetic Capillary Occlusion. Journal of Diabetes Research, 2016, 2016, 1-13.	2.3	4
119	Qualitative Findings from Study of Interdisciplinary Education in Computational Modeling for Life Sciences Student Researchers from Emerging Research Institutions. , 2018, , .		4
120	Unification of aggregate growth models by emergence from cellular and intracellular mechanisms. Royal Society Open Science, 2020, 7, 192148.	2.4	4
121	Computational modelling of nephron progenitor cell movement and aggregation during kidney organogenesis. Mathematical Biosciences, 2022, 344, 108759.	1.9	3
122	Visualizing cells and their connectivity graphs for CompuCell3D. , 2012, , .		2
123	Transcriptogram analysis reveals relationship between viral titer and gene sets responses during Corona-virus infection. NAR Genomics and Bioinformatics, 2022, 4, lqac020.	3.2	2
124	Probing soap-film friction with two-phase foam flow. Philosophical Magazine Letters, 2008, 88, 679-691.	1.2	1
125	Workflows for parameter studies of multi-cell modeling. , 2010, , .		1
126	Formalizing knowledge in multi-scale agent-based simulations. , 2016, 16, 115-122.		1

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127	Deep Learning Approaches to Surrogates for Solving the Diffusion Equation for Mechanistic Real-World Simulations. Frontiers in Physiology, 2021, 12, 667828.	2.8	1
128	Structural coupling of a Potts model cell. , 2017, , .		1
129	A MODELING AND SIMULATION LANGUAGE FOR BIOLOGICAL CELLS WITH COUPLED MECHANICAL AND CHEMICAL PROCESSES. , 2017, 2017, .		1
130	Introduction to Proceedings of the Workshop â€œBiocomplexity VI: Complex Behavior in Unicellular Organismsâ€. Biofilms, 2004, 1, 227-228.	0.6	0
131	Towards a multi-scale agent-based programming language methodology. , 2016, 2016, 1230-1240.		0
132	Exact solution for the Anisotropic Ornsteinâ€“Uhlenbeck process. Physica A: Statistical Mechanics and Its Applications, 2022, 587, 126526.	2.6	0
133	Mathematical modeling of wound healing using Compucell3D multicell modeling environment. FASEB Journal, 2012, 26, 916.10.	0.5	0
134	Multiscale modeling goes out on a limb: in silico simulations of developmental mechanisms shared between somitogenesis and the developing embryonic avian limb bud. FASEB Journal, 2013, 27, 964.1.	0.5	0
135	Title is missing!. , 2020, 16, e1008451.		0
136	Title is missing!. , 2020, 16, e1008451.		0
137	Title is missing!. , 2020, 16, e1008451.		0
138	Title is missing!. , 2020, 16, e1008451.		0
139	A computational model of liver tissue damage and repair. , 2020, 15, e0243451.		0
140	A computational model of liver tissue damage and repair. , 2020, 15, e0243451.		0
141	A computational model of liver tissue damage and repair. , 2020, 15, e0243451.		0
142	A computational model of liver tissue damage and repair. , 2020, 15, e0243451.		0