Nir S Gov

List of Publications by Year
in descending order

157 papers	7,691 citations	53794 45 h-index	66911 78 g-index
172 all docs	172 docs citations	172 times ranked	6987 citing authors

#	Article	IF	Citations
1	Ants resort to majority concession to reach democratic consensus in the presence of a persistent minority. Current Biology, 2022, 32, 645-653.e8.	3.9	3
2	20S proteasomes secreted by the malaria parasite promote its growth. Nature Communications, 2021, 12, 1172.	12.8	45
3	Chemokine-biased robust self-organizing polarization of migrating cells in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	26
4	Modelling cellular spreading and emergence of motility in the presence of curved membrane proteins and active cytoskeleton forces. European Physical Journal Plus, 2021, 136, 1.	2.6	20
5	Local actin dynamics couple speed and persistence in a cellular Potts model of cell migration. Biophysical Journal, 2021, 120, 2609-2622.	0.5	28
6	Sequential Decision-Making in Ants and Implications to the Evidence Accumulation Decision Model. Frontiers in Applied Mathematics and Statistics, 2021, 7, .	1.3	7
7	Are cell jamming and unjamming essential in tissue development?. Cells and Development, 2021, 168, 203727.	1.5	30
8	Spatiotemporal dynamics of animal contests arise from effective forces between contestants. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	3
9	The geometry of decision-making in individuals and collectives. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	49
10	Tissue topography steers migrating <i>Drosophila</i> border cells. Science, 2020, 370, 987-990.	12.6	49
11	Pair formation in insect swarms driven by adaptive long-range interactions. Journal of the Royal Society Interface, 2020, 17, 20200367.	3.4	2
12	Active Trap Model. Physical Review Letters, 2020, 124, 118002.	7.8	43
13	Excitable solitons: Annihilation, crossover, and nucleation of pulses in mass-conserving activator-inhibitor media. Physical Review E, 2020, 101, 022213.	2.1	6
14	Cell-Substrate Patterns Driven by Curvature-Sensitive Actin Polymerization: Waves and Podosomes. Cells, 2020, 9, 782.	4.1	6
15	Why a Large-Scale Mode Can Be Essential for Understanding Intracellular Actin Waves. Cells, 2020, 9, 1533.	4.1	9
16	Active diffusion in oocytes nonspecifically centers large objects during prophase I and meiosis I. Journal of Cell Biology, 2020, 219, .	5.2	33
17	Dynamics and escape of active particles in a harmonic trap. Physical Review Research, 2020, 2, .	3.6	29
18	Similarities between insect swarms and isothermal globular clusters. Physical Review Research, 2020, 2, .	3.6	6

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19	One-dimensional cell motility patterns. Physical Review Research, 2020, 2, .	3.6	40
20	Cell confinement reveals a branched-actin independent circuit for neutrophil polarity. PLoS Biology, 2019, 17, e3000457.	5.6	54
21	Cellular Blebs and Membrane Invaginations Are Coupled through Membrane Tension Buffering. Biophysical Journal, 2019, 117, 1485-1495.	0.5	11
22	Theoretical study of vesicle shapes driven by coupling curved proteins and active cytoskeletal forces. Soft Matter, 2019, 15, 5319-5330.	2.7	51
23	Signatures of motor susceptibility to forces in the dynamics of a tracer particle in an active gel. Physical Review E, 2019, 99, 022419.	2.1	16
24	Cell cluster migration: Connecting experiments with physical models. Seminars in Cell and Developmental Biology, 2019, 93, 77-86.	5.0	9
25	Guided by curvature: shaping cells by coupling curved membrane proteins and cytoskeletal forces. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170115.	4.0	74
26	Spatial Fluctuations at Vertices of Epithelial Layers: Quantification of Regulation by Rho Pathway. Biophysical Journal, 2018, 114, 939-946.	0.5	17
27	Theory of Epithelial Cell Shape Transitions Induced by Mechanoactive Chemical Gradients. Biophysical Journal, 2018, 114, 968-977.	0.5	28
28	Collective conflict resolution in groups on the move. Physical Review E, 2018, 97, 032304.	2.1	17
29	Bi-stability in cooperative transport by ants in the presence of obstacles. PLoS Computational Biology, 2018, 14, e1006068.	3.2	15
30	Living Matter: Mesoscopic Active Materials. Advanced Materials, 2018, 30, e1707028.	21.0	46
31	Frustration-induced phases in migrating cell clusters. Science Advances, 2018, 4, eaar8483.	10.3	32
32	The physics of cooperative transport in groups of ants. Nature Physics, 2018, 14, 683-693.	16.7	113
33	A random first-order transition theory for an active glass. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 7688-7693.	7.1	63
34	Active Mechanics Reveal Molecular-Scale Force Kinetics in Living Oocytes. Biophysical Journal, 2018, 114, 1667-1679.	0.5	67
35	Tuning of Differential Lipid Order Between Submicrometric Domains and Surrounding Membrane Upon Erythrocyte Reshaping. Cellular Physiology and Biochemistry, 2018, 48, 2563-2582.	1.6	22
36	Exclusion and Hierarchy of Time Scales Lead to Spatial Segregation of Molecular Motors in Cellular Protrusions. Physical Review Letters, 2017, 118, 018102.	7.8	11

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37	Modeling collective cell migration in geometric confinement. Physical Biology, 2017, 14, 035001.	1.8	26
38	Cytoskeletal connectivity may guide erythrocyte membrane ex- and invagination â€" A discussion point how biophysical principles might be exploited by a parasite invading erythrocytes. Blood Cells, Molecules, and Diseases, 2017, 65, 78-80.	1.4	3
39	Nonequilibrium mode-coupling theory for dense active systems of self-propelled particles. Soft Matter, 2017, 13, 7609-7616.	2.7	44
40	Generalized Archimedes' principle in active fluids. Physical Review E, 2017, 96, 032606.	2.1	19
41	Stable swarming using adaptive long-range interactions. Physical Review E, 2017, 95, 042405.	2.1	10
42	Forces in inhomogeneous open active-particle systems. Physical Review E, 2017, 96, 052409.	2.1	11
43	Fronts and waves of actin polymerization in a bistability-based mechanism of circular dorsal ruffles. Nature Communications, 2017, 8, 15863.	12.8	38
44	Geometrical Determinants of Neuronal Actin Waves. Frontiers in Cellular Neuroscience, 2017, 11, 86.	3.7	11
45	Nonequilibrium dissipation in living oocytes. Europhysics Letters, 2016, 116, 30008.	2.0	51
46	Emergent oscillations assist obstacle negotiation during ant cooperative transport. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14615-14620.	7.1	21
47	Long-range acoustic interactions in insect swarms: an adaptive gravity model. New Journal of Physics, 2016, 18, 073042.	2.9	52
48	Modeling and analysis of collective cell migration in an in vivo three-dimensional environment. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E2134-41.	7.1	63
49	Deterministic patterns in cell motility. Nature Physics, 2016, 12, 1146-1152.	16.7	40
50	Repulsive cues combined with physical barriers and cellâ€"cell adhesion determine progenitor cell positioning during organogenesis. Nature Communications, 2016, 7, 11288.	12.8	38
51	Reactionâ€"diffusionâ€"advection approach to spatially localized treadmilling aggregates of molecular motors. Physica D: Nonlinear Phenomena, 2016, 318-319, 84-90.	2.8	4
52	Equilibrium physics breakdown reveals the active nature of red blood cell flickering. Nature Physics, 2016, 12, 513-519.	16.7	231
53	F-actin mechanics control spindle centring in the mouse zygote. Nature Communications, 2016, 7, 10253.	12.8	75
54	Modeling the dynamics of a tracer particle in an elastic active gel. Physical Review E, 2015, 92, 012716.	2.1	46

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55	Pearling instability of membrane tubes driven by curved proteins and actin polymerization. Physical Biology, 2015, 12, 066022.	1.8	20
56	Self-organization of waves and pulse trains by molecular motors in cellular protrusions. Scientific Reports, 2015, 5, 13521.	3.3	20
57	Activity-driven fluctuations in living cells. Europhysics Letters, 2015, 110, 48005.	2.0	103
58	Dynamics of Actin Waves on Patterned Substrates: A Quantitative Analysis of Circular Dorsal Ruffles. PLoS ONE, 2015, 10, e0115857.	2.5	32
59	A Biophysical Model for the Staircase Geometry of Stereocilia. PLoS ONE, 2015, 10, e0127926.	2.5	6
60	Physics of active jamming during collective cellular motion in a monolayer. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15314-15319.	7.1	334
61	Collective Cell Motility Promotes Chemotactic Prowess and Resistance to Chemorepulsion. Current Biology, 2015, 25, 242-250.	3.9	126
62	A narrow window of cortical tension guides asymmetric spindle positioning in the mouse oocyte. Nature Communications, 2015, 6, 6027.	12.8	66
63	Ant groups optimally amplify the effect of transiently informed individuals. Nature Communications, 2015, 6, 7729.	12.8	115
64	Three-ring circus without a ringmaster: Self-organization of supracellular actin ring patterns during epithelial morphogenesis. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8521-8522.	7.1	0
65	Direct Cytoskeleton Forces Cause Membrane Softening in Red Blood Cells. Biophysical Journal, 2015, 108, 2794-2806.	0.5	67
66	Modeling the finger instability in an expanding cell monolayer. Integrative Biology (United Kingdom), 2015, 7, 1218-1227.	1.3	55
67	Actin Flows Mediate a Universal Coupling between Cell Speed and Cell Persistence. Cell, 2015, 161, 374-386.	28.9	369
68	Active diffusion positions the nucleus in mouse oocytes. Nature Cell Biology, 2015, 17, 470-479.	10.3	139
69	Gap geometry dictates epithelial closure efficiency. Nature Communications, 2015, 6, 7683.	12.8	118
70	Regulation of epithelial cell organization by tuning cellâ€"substrate adhesion. Integrative Biology (United Kingdom), 2015, 7, 1228-1241.	1.3	52
71	Propagating Waves of Directionality and Coordination Orchestrate Collective Cell Migration. PLoS Computational Biology, 2014, 10, e1003747.	3.2	43
72	Electrifying movement. Nature Materials, 2014, 13, 331-332.	27.5	5

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73	Tuning the adhesive geometry of neurons: length and polarity control. Soft Matter, 2014, 10, 2381.	2.7	23
74	Dynamics of Active Semiflexible Polymers. Biophysical Journal, 2014, 107, 1065-1073.	0.5	112
75	Membrane-Wrapping Contributions to Malaria Parasite Invasion of the Human Erythrocyte. Biophysical Journal, 2014, 107, 43-54.	0.5	85
76	Physical Model for the Geometry of Actin-Based Cellular Protrusions. Biophysical Journal, 2014, 107, 576-587.	0.5	27
77	Traffic jams and shocks of molecular motors inside cellular protrusions. Physical Review E, 2014, 89, 052703.	2.1	16
78	A soft cortex is essential for asymmetric spindle positioning in mouse oocytes. Nature Cell Biology, 2013, 15, 958-966.	10.3	145
79	Guidance of collective cell migration by substrate geometry. Integrative Biology (United Kingdom), 2013, 5, 1026.	1.3	241
80	Modelling interacting molecular motors with an internal degree of freedom. New Journal of Physics, 2013, 15, 025009.	2.9	43
81	Patterning of Polar Active Filaments on a Tense Cylindrical Membrane. Physical Review Letters, 2013, 110, 168104.	7.8	11
82	Transport dynamics of molecular motors that switch between an active and inactive state. Physical Review E, 2013, 88, 022714.	2.1	24
83	Linking actin networks and cell membrane via a reaction-diffusion-elastic description of nonlinear filopodia initiation. Physical Review E, 2013, 88, 022718.	2.1	19
84	Sarcomeric Pattern Formation by Actin Cluster Coalescence. PLoS Computational Biology, 2012, 8, e1002544.	3.2	28
85	Cylindrical Cellular Geometry Ensures Fidelity of Division Site Placement in Fission Yeast. Journal of Cell Science, 2012, 125, 3850-7.	2.0	35
86	Keep politics out of academia in Israel. Nature, 2012, 488, 281-281.	27.8	0
87	Competition and compensation. Bioarchitecture, 2012, 2, 171-174.	1.5	12
88	FtsZ rings and helices: physical mechanisms for the dynamic alignment of biopolymers in rod-shaped bacteria. Physical Biology, 2012, 9, 016009.	1.8	14
89	Releasing the brakes while hanging on. Bioarchitecture, 2012, 2, 11-14.	1.5	5
90	On the role of membrane anisotropy and BAR proteins in the stability of tubular membrane structures. Journal of Biomechanics, 2012, 45, 231-238.	2.1	44

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91	Lifetime of Major Histocompatibility Complex Class-I Membrane Clusters IsÂControlled by the Actin Cytoskeleton. Biophysical Journal, 2012, 102, 1543-1550.	0.5	33
92	Effective Temperature of Red-Blood-Cell Membrane Fluctuations. Physical Review Letters, 2011, 106, 238103.	7.8	125
93	Timing of Z-ring localization in<i>Escherichia coli</i>. Physical Biology, 2011, 8, 066003.	1.8	26
94	Modeling FtsZ ring formation in the bacterial cellâ€”anisotropic aggregation via mutual interactions of polymer rods. Physical Biology, 2011, 8, 026007.	1.8	16
95	Cooperative dynamics. Journal of Physics Condensed Matter, 2011, 23, 370301.	1.8	0
96	Moving under peer pressure. Nature Materials, 2011, 10, 412-414.	27.5	18
97	Cortactin Releases the Brakes in Actin- Based Motility by Enhancing WASP-VCA Detachment from Arp2/3 Branches. Current Biology, 2011, 21, 2092-2097.	3.9	37
98	Membrane-mediated interactions and the dynamics of dynamin oligomers on membrane tubes. New Journal of Physics, 2011, 13, 065008.	2.9	36
99	Metabolic remodeling of the human red blood cell membrane measured by quantitative phase microscopy. , 2011, , .		1
100	The Eps8/IRSp53/VASP Network Differentially Controls Actin Capping and Bundling in Filopodia Formation. PLoS Computational Biology, 2011, 7, e1002088.	3.2	56
101	Theoretical Model for Cellular Shapes Driven by Protrusive and Adhesive Forces. PLoS Computational Biology, 2011, 7, e1001127.	3.2	50
102	Cytoskeletal Reorganization of Red Blood Cell Shape: Curling of Free Edges and Malaria Merozoites. Behavior Research Methods, 2011, 13, 73-102.	4.0	3
103	Propagating Cell-Membrane Waves Driven by Curved Activators of Actin Polymerization. PLoS ONE, 2011, 6, e18635.	2.5	62
104	Physical Model of the Dynamic Instability in an Expanding Cell Culture. Biophysical Journal, 2010, 98, 361-370.	0.5	84
105	Curling and Local Shape Changes of Red Blood Cell Membranes Driven by Cytoskeletal Reorganization. Biophysical Journal, 2010, 99, 808-816.	0.5	43
106	Variation of the Lateral Mobility of Transmembrane Peptides with Hydrophobic Mismatch. Journal of Physical Chemistry B, 2010, 114, 3559-3566.	2.6	34
107	Metabolic remodeling of the human red blood cell membrane. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 1289-1294.	7.1	358
108	Chapter 4 Cytoskeletal Control of Red Blood Cell Shape. Behavior Research Methods, 2009, 10, 95-119.	4.0	28

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109	Membrane-mediated interactions drive the condensation and coalescence of FtsZ rings. Physical Biology, 2009, 6, 046017.	1.8	56
110	The complexity of living: when biology meets theory. Conference on Systems Dynamics of Intracellular Communication. EMBO Reports, 2009, 10, 1279-1279.	4.5	0
111	Physical model for the width distribution of axons. European Physical Journal E, 2009, 29, 337-344.	1.6	9
112	Diffusion in a Fluid Membrane with a Flexible Cortical Cytoskeleton. Biophysical Journal, 2009, 96, 818-830.	0.5	33
113	Calcium-Actin Waves and Oscillations of Cellular Membranes. Biophysical Journal, 2009, 97, 1558-1568.	0.5	30
114	Retroviral Assembly and Budding Occur through an Actin-Driven Mechanism. Biophysical Journal, 2009, 97, 2419-2428.	0.5	87
115	Phases of membrane tubules pulled by molecular motors. Soft Matter, 2009, 5, 2431.	2.7	5
116	Traction forces during collective cell motion. HFSP Journal, 2009, 3, 223-227.	2.5	48
117	Thickness distribution of actin bundles in vitro. European Biophysics Journal, 2008, 37, 447-454.	2.2	45
118	Dynamic compartmentalization of protein tyrosine phosphatase receptor Q at the proximal end of stereocilia: Implication of myosin VIâ€based transport. Cytoskeleton, 2008, 65, 528-538.	4.4	69
119	Effect of shortâ€range forces on the length distribution of fibrous cytoskeletal proteins. Biopolymers, 2008, 89, 711-721.	2.4	16
120	Physical Model of Contractile Ring Initiation in Dividing Cells. Biophysical Journal, 2008, 94, 1155-1168.	0.5	43
121	Protein Localization by Actin Treadmilling and Molecular Motors Regulates Stereocilia Shape and Treadmilling Rate. Biophysical Journal, 2008, 95, 5706-5718.	0.5	49
122	Packing defects and the width of biopolymer bundles. Physical Review E, 2008, 78, 011916.	2.1	23
123	Exciting cytoskeleton-membrane waves. Physical Review E, 2008, 78, 041911.	2.1	16
124	Less is more: removing membrane attachments<i>stiffens</i>the RBC cytoskeleton. New Journal of Physics, 2007, 9, 429-429.	2.9	20
125	Filament networks attached to membranes: cytoskeletal pressure and local bilayer deformation. New Journal of Physics, 2007, 9, 430-430.	2.9	17
126	Theory of the length distribution of tread-milling actin filaments inside bundles. Europhysics Letters, 2007, 77, 68005.	2.0	9

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127	Force Balance and Membrane Shedding at the Red-Blood-Cell Surface. Physical Review Letters, 2007, 98, 018102.	7.8	82
128	Fluctuations of coupled fluid and solid membranes with application to red blood cells. Physical Review E, 2007, 76, 051910.	2.1	56
129	Active elastic network: Cytoskeleton of the red blood cell. Physical Review E, 2007, 75, 011921.	2.1	62
130	Membrane Waves Driven by Actin and Myosin. Physical Review Letters, 2007, 98, 168103.	7.8	80
131	Collective cell migration patterns: Follow the leader. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 15970-15971.	7.1	59
132	Phase Transitions of the Coupled Membrane-Cytoskeleton Modify Cellular Shape. Biophysical Journal, 2007, 93, 3798-3810.	0.5	104
133	Morphological Transitions during the Formation of Templated Mesoporous Materials:â€‰ Theoretical Modeling. Langmuir, 2006, 22, 605-614.	3.5	19
134	Dynamics of Membranes Driven by Actin Polymerization. Biophysical Journal, 2006, 90, 454-469.	0.5	154
135	Modeling the Size Distribution of Focal Adhesions. Biophysical Journal, 2006, 91, 2844-2847.	0.5	29
136	Nonequilibrium membrane fluctuations driven by active proteins. Journal of Chemical Physics, 2006, 124, 074903.	3.0	76
137	Lateral mobility of proteins in liquid membranes revisited. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 2098-2102.	7.1	342
138	Dynamics and Morphology of Microvilli Driven by Actin Polymerization. Physical Review Letters, 2006, 97, 018101.	7.8	23
139	Diffusion in curved fluid membranes. Physical Review E, 2006, 73, 041918.	2.1	49
140	Physics of cell elasticity, shape and adhesion. Physica A: Statistical Mechanics and Its Applications, 2005, 352, 171-201.	2.6	65
141	Red Blood Cell Shape and Fluctuations: Cytoskeleton Confinement and ATP Activity. Journal of Biological Physics, 2005, 31, 453-464.	1.5	22
142	Red Blood Cell Membrane Fluctuations and Shape Controlled by ATP-Induced Cytoskeletal Defects. Biophysical Journal, 2005, 88, 1859-1874.	0.5	271
143	Membrane Undulations Driven by Force Fluctuations of Active Proteins. Physical Review Letters, 2004, 93, 268104.	7.8	126
144	Topological defects and HCP nucleation in BCC helium. Physica B: Condensed Matter, 2003, 329-333, 382-383.	2.7	0

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145	Spin ordering and coherent atomic motion in bcc solid. Physica B: Condensed Matter, 2003, 329-333, 400-401.	2.7	0
146	Inside a quantum solid. Contemporary Physics, 2003, 44, 145-151.	1.8	13
147	Coherent dipolar correlations in the low-temperature phase of geometrically frustrated SrCr8$minus$xGa4$plus$xO19. Journal of Physics Condensed Matter, 2002, 14, 6931-6940.	1.8	1
148	Vortex-Loops and Phase Nucleation in Superfluid 4He and 3He. Journal of Low Temperature Physics, 2002, 126, 621-625.	1.4	3
149	Correlated Atomic Motion and Spin-Ordering in bcc 3He. Journal of Low Temperature Physics, 2002, 128, 55-85.	1.4	5
150	Vortex-Loops and Solid Nucleation in Superfluid 4He and 3He. Journal of Low Temperature Physics, 2002, 129, 25-42.	1.4	6
151	Quantum Nature of Dislocations in Pure bcc Helium. Journal of Low Temperature Physics, 2001, 125, 143-151.	1.4	1
152	The role of point defects in melting of solid He. Physica B: Condensed Matter, 2000, 280, 142-145.	2.7	1
153	Bcc 4He as a Coherent Quantum Solid: â€œSuper-Solidâ€?. Journal of Low Temperature Physics, 2000, 121, 731-736.	1.4	1
154	bcc4Heas a coherent quantum solid. Physical Review B, 2000, 62, 910-918.	3.2	6
155	Unusual Doppler effect in superfluid and nonanalyticity of4He-3He hydrodynamics. Journal of Low Temperature Physics, 1995, 100, 365-379.	1.4	0
156	Extraordinary sensitivity of the internal Doppler effect in a superfluidâˆ'34He admixture. Physical Review B, 1995, 52, 6739-6768.	3.2	1
157	Unusual Doppler shift of fourth sound in a 3Heâˆ'4He mixture. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 182, 149-152.	2.1	2