Samuel A Safran

List of Publications by Year in Descending Order

91 papers	4,203 citations	35 h-index	63 g-index
105 ext. papers	4,822 ext. citations	5.7 avg, IF	5.78 L-index

#	Paper	IF	Citations
91	Balance of osmotic pressures determines the nuclear-to-cytoplasmic volume ratio of the cell.. *Proceedings of the National Academy of Sciences of the United States of America*, **2022**, 119, e2118301119	11.5	0
90	Mesoscale phase separation of chromatin in the nucleus. *ELife*, **2021**, 10,	8.9	9
89	Confined Polymers in a Poor Solvent: The Role of Bonding to the Surface. *Macromolecules*, **2021**, 54, 4760-4768	5.5	1
88	Physical theory of biological noise buffering by multicomponent phase separation. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	7
87	Live imaging of chromatin distribution reveals novel principles of nuclear architecture and chromatin compartmentalization. *Science Advances*, **2021**, 7,	14.3	15
86	Active volume regulation in adhered cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 5604-5609	11.5	12
85	Cardiomyocyte Calcium Ion Oscillations-Lessons From Physics. *Frontiers in Physiology*, **2020**, 11, 164	4.6	3
84	Long-Time Phase Correlations Reveal Regulation of Beating Cardiomyocytes. *Physical Review Letters*, **2020**, 125, 258101	7.4	2
83	Equilibrium size distribution and phase separation of multivalent, molecular assemblies in dilute solution. *Soft Matter*, **2020**, 16, 5458-5469	3.6	7
82	Designer protein assemblies with tunable phase diagrams in living cells. *Nature Chemical Biology*, **2020**, 16, 939-945	11.7	20
81	Registry Kinetics of Myosin Motor Stacks Driven by Mechanical Force-Induced Actin Turnover. *Biophysical Journal*, **2019**, 117, 856-866	2.9	4
80	Physics of Spontaneous Calcium Oscillations in Cardiac Cells and Their Entrainment. *Physical Review Letters*, **2019**, 122, 198101	7.4	3
79	Scaling laws indicate distinct nucleation mechanisms of holes in the nuclear lamina. *Nature Physics*, **2019**, 15, 823-829	16.2	15
78	Screening length for finite-size ions in concentrated electrolytes. *Physical Review E*, **2019**, 100, 042615	2.4	32
77	Ordering of myosin II filaments driven by mechanical forces: experiments and theory. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2018**, 373,	5.8	35
76	Theory of frequency response of mechanically driven cardiomyocytes. *Scientific Reports*, **2018**, 8, 2237	4.9	8
75	Living Matter: Mesoscopic Active Materials. *Advanced Materials*, **2018**, 30, e1707028	24	28

74	Long-range self-organization of cytoskeletal myosin II filament stacks. *Nature Cell Biology*, **2017**, 19, 133-141	21.4	113
73	Compressive elasticity of polydisperse biopolymer gels. *Physical Review E*, **2017**, 95, 052415	2.4	11
72	Elastic interactions synchronize beating in cardiomyocytes. *Soft Matter*, **2016**, 12, 6088-95	3.6	15
71	Transcription rates in DNA brushes. *Soft Matter*, **2015**, 11, 3017-21	3.6	6
70	Response of adherent cells to mechanical perturbations of the surrounding matrix. *Soft Matter*, **2015**, 11, 1412-24	3.6	16
69	Nonlinearities of biopolymer gels increase the range of force transmission. *Physical Review E*, **2015**, 92, 032728	2.4	30
68	Substrate stiffness-modulated registry phase correlations in cardiomyocytes map structural order to coherent beating. *Nature Communications*, **2015**, 6, 6085	17.4	36
67	Visualizing the Entropy Change of a Thermal Reservoir. *Journal of Chemical Education*, **2014**, 91, 380-385	2.4	3
66	Prediction of the dependence of the line tension on the composition of linactants and the temperature in phase separated membranes. *Langmuir*, **2014**, 30, 11734-45	4	14
65	Line active molecules promote inhomogeneous structures in membranes: theory, simulations and experiments. *Advances in Colloid and Interface Science*, **2014**, 208, 58-65	14.3	36
64	Physics of adherent cells. *Reviews of Modern Physics*, **2013**, 85, 1327-1381	40.5	211
63	Hybrid lipids increase nanoscale fluctuation lifetimes in mixed membranes. *Physical Review E*, **2013**, 88, 032708	2.4	10
62	Hybrid lipids increase the probability of fluctuating nanodomains in mixed membranes. *Langmuir*, **2013**, 29, 5246-61	4	49
61	Dynamics of elastic interactions in soft and biological matter. *Physical Review E*, **2013**, 87, 042703	2.4	17
60	Evolution in students understanding of thermal physics with increasing complexity. *Physical Review Physics Education Research*, **2013**, 9,		6
59	Introductory physics going soft. *American Journal of Physics*, **2012**, 80, 51-60	0.7	7
58	Effect of charge inhomogeneity and mobility on colloid aggregation. *Langmuir*, **2012**, 28, 8329-36	4	18
57	How cells feel their substrate: spontaneous symmetry breaking of active surface stresses. *Soft Matter*, **2012**, 8, 3223	3.6	22

56	Cholesterol tilting drives phase separation in lipid bilayer membranes. *Soft Matter*, **2012**, 8, 5439	3.6	4
55	Scaling laws for the response of nonlinear elastic media with implications for cell mechanics. *Physical Review Letters*, **2012**, 108, 178103	7.4	43
54	Sarcomeric pattern formation by actin cluster coalescence. *PLoS Computational Biology*, **2012**, 8, e1002544	4	23
53	Diffusion in a soft confining environment: dynamic effects of thermal fluctuations. *Physical Review E*, **2012**, 86, 031111	2.4	4
52	Striated acto-myosin fibers can reorganize and register in response to elastic interactions with the matrix. *Biophysical Journal*, **2011**, 100, 2706-15	2.9	37
51	Long-range interaction between heterogeneously charged membranes. *Langmuir*, **2011**, 27, 4439-46	4	30
50	Mechanical consequences of cellular force generation. *Current Opinion in Solid State and Materials Science*, **2011**, 15, 169-176	12	14
49	Cyclic stress at mHz frequencies aligns fibroblasts in direction of zero strain. *PLoS ONE*, **2011**, 6, e28963	3.7	104
48	Line tension between domains in multicomponent membranes is sensitive to degree of unsaturation of hybrid lipids. *Soft Matter*, **2011**, 7, 7021	3.6	31
47	Nematic order by elastic interactions and cellular rigidity sensing. *Europhysics Letters*, **2011**, 93, 28007	1.6	9
46	Metabolic remodeling of the human red blood cell membrane measured by quantitative phase microscopy **2011**,		1
45	Optimal matrix rigidity for stress fiber polarization in stem cells. *Nature Physics*, **2010**, 6, 468-473	16.2	283
44	Is the Mechanics of Cell–Matrix Adhesion Amenable to Physical Modeling?. *Journal of Adhesion Science and Technology*, **2010**, 24, 2203-2214	2	4
43	Theory of the mechanical response of focal adhesions to shear flow. *Journal of Physics Condensed Matter*, **2010**, 22, 194111	1.8	4
42	Cell shape, spreading symmetry and the polarization of stress-fibers in cells. *Journal of Physics Condensed Matter*, **2010**, 22, 194110	1.8	64
41	Line active hybrid lipids determine domain size in phase separation of saturated and unsaturated lipids. *Biophysical Journal*, **2010**, 98, L21-3	2.9	69
40	Theoretical concepts and models of cellular mechanosensing. *Methods in Cell Biology*, **2010**, 98, 143-75	1.8	29
39	Metabolic remodeling of the human red blood cell membrane. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 1289-94	11.5	280

38	Chain ordering of hybrid lipids can stabilize domains in saturated/hybrid/cholesterol lipid membranes. *Europhysics Letters*, **2010**, 91, 28002	1.6	50
37	Direct measurement of sub-Debye-length attraction between oppositely charged surfaces. *Physical Review Letters*, **2009**, 103, 118304	7.4	37
36	In memory of pierre-gilles de gennes. *Journal of Physical Chemistry B*, **2009**, 113, 3591-2	3.4	
35	Hybrid lipids as a biological surface-active component. *Biophysical Journal*, **2009**, 97, 1087-94	2.9	97
34	Do cells sense stress or strain? Measurement of cellular orientation can provide a clue. *Biophysical Journal*, **2008**, 94, L29-31	2.9	63
33	Dynamics of cellular focal adhesions on deformable substrates: consequences for cell force microscopy. *Biophysical Journal*, **2008**, 95, 527-39	2.9	47
32	Self assembly modulated by interactions of two heterogeneously charged surfaces. *Physical Review Letters*, **2008**, 101, 128101	7.4	17
31	Dynamical theory of active cellular response to external stress. *Physical Review E*, **2008**, 78, 031923	2.4	52
30	Equilibrium domains on heterogeneously charged surfaces. *Langmuir*, **2007**, 23, 12016-23	4	28
29	Scattering form factors for self-assembled network junctions. *Journal of Chemical Physics*, **2007**, 127, 204711	3.9	11
28	Dynamics of cell orientation. *Nature Physics*, **2007**, 3, 655-659	16.2	189
27	Filament networks attached to membranes: cytoskeletal pressure and local bilayer deformation. *New Journal of Physics*, **2007**, 9, 430-430	2.9	15
26	Electrostatic interactions of asymmetrically charged membranes. *Europhysics Letters*, **2007**, 79, 48002	1.6	42
25	Active elasticity of gels with contractile cells. *Physical Review Letters*, **2006**, 97, 128103	7.4	43
24	Force-induced adsorption and anisotropic growth of focal adhesions. *Biophysical Journal*, **2006**, 90, 3469-84	2.9	99
23	Limitation of cell adhesion by the elasticity of the extracellular matrix. *Biophysical Journal*, **2006**, 91, 61-73	2.9	99
22	Competitive adsorption of amphiphilic molecules and the stability of water-swollen micelles in oil. *Langmuir*, **2005**, 21, 7109-20	4	1
21	Red blood cell membrane fluctuations and shape controlled by ATP-induced cytoskeletal defects. *Biophysical Journal*, **2005**, 88, 1859-74	2.9	233

20	Scaling relations for counterion release and attraction of oppositely charged surfaces. *Europhysics Letters*, **2005**, 69, 826-831	1.6	29
19	Physics of cell elasticity, shape and adhesion. *Physica A: Statistical Mechanics and Its Applications*, **2005**, 352, 171-201	3.3	56
18	Red blood cell shape and fluctuations: cytoskeleton confinement and ATP activity. *Journal of Biological Physics*, **2005**, 31, 453-64	1.6	18
17	Elastic Interactions of Biological Cells **2005**, 329-342		
16	Cell mechanosensitivity controls the anisotropy of focal adhesions. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 12520-5	11.5	179
15	Attractive instability of oppositely charged membranes induced by charge density fluctuations. *Physical Review Letters*, **2004**, 93, 138101	7.4	16
14	Temperature dependence of the thermodynamics and kinetics of micellar solutions. *Langmuir*, **2004** , 20, 2199-207	4	57
13	Role of cross-links in bundle formation, phase separation and gelation of long filaments. *Europhysics Letters*, **2003**, 63, 139-145	1.6	42
12	Cytoskeleton confinement and tension of red blood cell membranes. *Physical Review Letters*, **2003**, 90, 228101	7.4	142
11	Measurement of cellular forces at focal adhesions using elastic micro-patterned substrates. *Materials Science and Engineering C*, **2003**, 23, 387-394	8.3	29
10	Initiation and dynamics of hemifusion in lipid bilayers. *Biophysical Journal*, **2003**, 85, 381-9	2.9	19
9	Universal reduction of pressure between charged surfaces by long-wavelength surface charge modulation. *Europhysics Letters*, **2002**, 60, 629-635	1.6	31
8	Enhanced counterion localization induced by surface charge modulation. *Europhysics Letters*, **2002**, 58, 785-791	1.6	41
7	Statistical thermodynamics of soft surfaces. *Surface Science*, **2002**, 500, 127-146	1.8	24
6	Calculation of forces at focal adhesions from elastic substrate data: the effect of localized force and the need for regularization. *Biophysical Journal*, **2002**, 83, 1380-94	2.9	285
5	Polymer-induced membrane contraction, phase separation, and fusion via Marangoni flow. *Biophysical Journal*, **2001**, 81, 659-66	2.9	38
4	Statistical Thermodynamics of Surfaces, Interfaces, and Membranes		40
3	Live imaging of chromatin distribution in muscle nuclei reveals novel principles of nuclear architecture and chromatin compartmentalization		2

List of Publications

2	Mesoscale phase separation of chromatin in the nucleus	1
1	Physical theory of biological noise buffering by multi-component phase separation	1