Padmini Rangamani

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

117 papers	1,969 citations	23 h-index	41 g-index
164 ext. papers	2,903 ext. citations	5.8 avg, IF	5.42 L-index

#	Paper	IF	Citations
117	Cell shape and negative links in regulatory motifs together control spatial information flow in signaling networks. *Cell*, **2008**, 133, 666-80	56.2	226
116	Design principles for robust vesiculation in clathrin-mediated endocytosis. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E1118-E1127	11.5	112
115	Decoding information in cell shape. *Cell*, **2013**, 154, 1356-69	56.2	111
114	Membrane fission by protein crowding. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E3258-E3267	11.5	102
113	Oscillatory phase separation in giant lipid vesicles induced by transmembrane osmotic differentials. *ELife*, **2014**, 3, e03695	8.9	85
112	Protein-induced membrane curvature alters local membrane tension. *Biophysical Journal*, **2014**, 107, 751-762	2.9	77
111	Phase Separation of a PKA Regulatory Subunit Controls cAMP Compartmentation and Oncogenic Signaling. *Cell*, **2020**, 182, 1531-1544.e15	56.2	68
110	Interaction between surface shape and intra-surface viscous flow on lipid membranes. *Biomechanics and Modeling in Mechanobiology*, **2013**, 12, 833-45	3.8	61
109	Pulsatile Lipid Vesicles under Osmotic Stress. *Biophysical Journal*, **2017**, 112, 1682-1691	2.9	49
108	Survival and apoptotic pathways initiated by TNF-alpha: modeling and predictions. *Biotechnology and Bioengineering*, **2007**, 97, 1216-29	4.9	49
107	Mixing Water, Transducing Energy, and Shaping Membranes: Autonomously Self-Regulating Giant Vesicles. *Langmuir*, **2016**, 32, 2151-63	4	47
106	Cell spreading as a hydrodynamic process. *Soft Matter*, **2010**, 6, 4788	3.6	47
105	Shear-Induced Nitric Oxide Production by Endothelial Cells. *Biophysical Journal*, **2016**, 111, 208-21	2.9	46
104	Mechanisms controlling cell size and shape during isotropic cell spreading. *Biophysical Journal*, **2010** , 98, 2136-46	2.9	43
103	Principles of self-organization and load adaptation by the actin cytoskeleton during clathrin-mediated endocytosis. *ELife*, **2020**, 9,	8.9	43
102	Fund Black scientists. *Cell*, **2021**, 184, 561-565	56.2	42
101	Modeling Membrane Curvature Generation due to Membrane?Protein Interactions. *Biomolecules*, **2018**, 8,	5.9	40

100	The plasma membrane as a capacitor for energy and metabolism. *American Journal of Physiology - Cell Physiology*, **2016**, 310, C181-92	5.4	39
99	Dendritic spine geometry and spine apparatus organization govern the spatiotemporal dynamics of calcium. *Journal of General Physiology*, **2019**, 151, 1017-1034	3.4	30
98	Paradoxical signaling regulates structural plasticity in dendritic spines. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, E5298-307	11.5	27
97	Signaling network triggers and membrane physical properties control the actin cytoskeleton-driven isotropic phase of cell spreading. *Biophysical Journal*, **2011**, 100, 845-57	2.9	27
96	Small scale membrane mechanics. *Biomechanics and Modeling in Mechanobiology*, **2014**, 13, 697-711	3.8	24
95	The GAPs, GEFs, GDIs and□ow, GEMs: New kids on the heterotrimeric G protein signaling block. *Cell Cycle*, **2017**, 16, 607-612	4.7	23
94	Pulsatile Gating of Giant Vesicles Containing Macromolecular Crowding Agents Induced by Colligative Nonideality. *Journal of the American Chemical Society*, **2018**, 140, 691-699	16.4	23
93	Geometric principles of second messenger dynamics in dendritic spines. *Scientific Reports*, **2019**, 9, 11676	4.9	22
92	Modelling spatio-temporal interactions within the cell. *Journal of Biosciences*, **2007**, 32, 157-67	2.3	21
91	Spontaneous formation of nanometer scale tubular vesicles in aqueous mixtures of lipid and block copolymer amphiphiles. *Soft Matter*, **2017**, 13, 1107-1115	3.6	19
90	The role of traction in membrane curvature generation. *Molecular Biology of the Cell*, **2018**, 29, 2024-2035	3.5	19
89	Modelling cellular signalling systems. *Essays in Biochemistry*, **2008**, 45, 83-94	7.6	19
88	3D mesh processing using GAMer 2 to enable reaction-diffusion simulations in realistic cellular geometries. *PLoS Computational Biology*, **2020**, 16, e1007756	5	19
87	Iterative community-driven development of a SARS-CoV-2 tissue simulator **2021**,		18
86	Membrane bending by protein phase separation. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	18
85	Non-uniform distribution of myosin-mediated forces governs red blood cell membrane curvature through tension modulation. *PLoS Computational Biology*, **2020**, 16, e1007890	5	17
84	Gaussian curvature directs the distribution of spontaneous curvature on bilayer membrane necks. *Soft Matter*, **2018**, 14, 2281-2294	3.6	17
83	Systems biology of cellular membranes: a convergence with biophysics. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2017**, 9, e1386	6.6	17

82	Lipid Unsaturation Properties Govern the Sensitivity of Membranes to Photoinduced Oxidative Stress. *Biophysical Journal*, **2019**, 116, 910-920	2.9	15
81	Computational Modeling Reveals Frequency Modulation of Calcium-cAMP/PKA Pathway in Dendritic Spines. *Biophysical Journal*, **2019**, 117, 1963-1980	2.9	15
80	Spatially compartmentalized phase regulation of a Ca-cAMP-PKA oscillatory circuit. *ELife*, **2020**, 9,	8.9	14
79	A mechanical model reveals that non-axisymmetric buckling lowers the energy barrier associated with membrane neck constriction. *Soft Matter*, **2020**, 16, 784-797	3.6	12
78	Emerging themes and unifying concepts underlying cell behavior regulation by the pericellular space. *Acta Biomaterialia*, **2019**, 96, 81-98	10.8	11
77	Variable tilt on lipid membranes. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2014**, 470, 20140463	2.4	11
76	A predictive computational model reveals that GIV/girdin serves as a tunable valve for EGFR-stimulated cyclic AMP signals. *Molecular Biology of the Cell*, **2019**, 30, 1621-1633	3.5	9
75	ATP synthase: Evolution, energetics, and membrane interactions. *Journal of General Physiology*, **2020**, 152,	3.4	9
74	Modeling membrane nanotube morphology: the role of heterogeneity in composition and material properties. *Scientific Reports*, **2020**, 10, 2527	4.9	8
73	Analysis of lipid flow on minimal surfaces. *Continuum Mechanics and Thermodynamics*, **2016**, 28, 503-513	3.5	8
72	The Role of Traction in Membrane Curvature Generation. *Biophysical Journal*, **2018**, 114, 600a	2.9	8
71	DLITE Uses Cell-Cell Interface Movement to Better Infer Cell-Cell Tensions. *Biophysical Journal*, **2019**, 117, 1714-1727	2.9	8
70	Geometric Control of Frequency Modulation of cAMP Oscillations due to Calcium in Dendritic Spines. *Biophysical Journal*, **2019**, 117, 1981-1994	2.9	8
69	Multiscale modeling of cell shape from the actin cytoskeleton. *Progress in Molecular Biology and Translational Science*, **2014**, 123, 143-67	4	8
68	An Open-Source Mesh Generation Platform for Biophysical Modeling Using Realistic Cellular Geometries. *Biophysical Journal*, **2020**, 118, 1003-1008	2.9	7
67	Transient domains of ordered water induced by divalent ions lead to lipid membrane curvature fluctuations. *Communications Chemistry*, **2020**, 3,	6.3	7
66	G□q-mediated calcium dynamics and membrane tension modulate neurite plasticity. *Molecular Biology of the Cell*, **2020**, 31, 683-694	3.5	6
65	Lipid tubule growth by osmotic pressure. *Journal of the Royal Society Interface*, **2013**, 10, 20130637	4.1	6

64	Cell shape regulates subcellular organelle location to control early Ca2+ signal dynamics in Vascular Smooth Muscle Cells		6
63	Membrane bending by protein phase separation		6
62	Computational modeling reveals frequency modulation of calcium-cAMP/PKA pathway in dendritic spines		6
61	A spatial model of YAP/TAZ signaling reveals how stiffness, dimensionality, and shape contribute to emergent outcomes. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	6
60	Applications and Challenges of Machine Learning to Enable Realistic Cellular Simulations. *Frontiers in Physics*, **2020**, 7,	3.9	5
59	Solubilization kinetics determines the pulsatory dynamics of lipid vesicles exposed to surfactant. *Biochimica Et Biophysica Acta - Biomembranes*, **2018**, 1860, 2032-2041	3.8	5
58	Dual biochemical oscillators may control cellular reversals in Myxococcus xanthus. *Biophysical Journal*, **2014**, 107, 2700-11	2.9	5
57	Dendritic spine geometry and spine apparatus organization govern the spatiotemporal dynamics of calcium		5
56	Geometric control of frequency modulation of cAMP oscillations due to Ca2+-bursts in dendritic spines		5
55	Cell shape regulates subcellular organelle location to control early Ca signal dynamics in vascular smooth muscle cells. *Scientific Reports*, **2020**, 10, 17866	4.9	5
54	Transport phenomena in fluid films with curvature elasticity. *Journal of Fluid Mechanics*, **2020**, 905,	3.7	5
53	Stability Analysis of a Bulk-Surface Reaction Model for Membrane Protein Clustering. *Bulletin of Mathematical Biology*, **2020**, 82, 30	2.1	4
52	GAMer 2: A System for 3D Mesh Processing of Cellular Electron Micrographs		4
51	Interactions between calmodulin and neurogranin govern the dynamics of CaMKII as a leaky integrator. *PLoS Computational Biology*, **2020**, 16, e1008015	5	4
50	Diffuso-kinetic membrane budding dynamics. *Soft Matter*, **2020**, 16, 10889-10899	3.6	4
49	The Mechanics and Thermodynamics of Tubule Formation in Biological Membranes. *Journal of Membrane Biology*, **2021**, 254, 273-291	2.3	4
48	Geometric coupling of helicoidal ramps and curvature-inducing proteins in organelle membranes. *Journal of the Royal Society Interface*, **2019**, 16, 20190354	4.1	3
47	Regulating cellular cyclic adenosine monophosphate: "Sources," "sinks," and now, "tunable valves". *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2020**, 12, e1490	6.6	3

46	Geometric principles of second messenger dynamics in dendritic spines		3
45	Computational modeling approaches to cAMP/PKA signaling in cardiomyocytes. *Journal of Molecular and Cellular Cardiology*, **2021**, 154, 32-40	5.8	3
44	Actin force generation in vesicle formation: mechanistic insights from cryo-electron tomography		3
43	Systems modeling predicts that mitochondria ER contact sites regulate the postsynaptic energy landscape. *Npj Systems Biology and Applications*, **2021**, 7, 26	5	3
42	Local sensitivity analysis of the membrane shape equation derived from the Helfrich energy. *Mathematics and Mechanics of Solids*, **2021**, 26, 356-385	2.3	3
41	Stability analysis in spatial modeling of cell signaling. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2018**, 10, e1395	6.6	3
40	Protein-Mediated Beads-on-a-String Structure Formation Along Membrane Nanotubes in Live Cells. *Biophysical Journal*, **2018**, 114, 392a	2.9	2
39	Biophysics at the coffee shop: lessons learned working with George Oster. *Molecular Biology of the Cell*, **2019**, 30, 1882-1889	3.5	2
38	Ten simple rules for women principal investigators during a pandemic. *PLoS Computational Biology*, **2020**, 16, e1008370	5	2
37	Solubilization kinetics determines the pulsatory dynamics of lipid vesicles exposed to surfactant		2
36	Gaussian curvature directs the distribution of spontaneous curvature on bilayer membrane necks		2
35	The role of traction in membrane curvature generation		2
34	Transport Phenomena in Fluid Films with Curvature Elasticity		2
33	Local sensitivity analysis of the Membrane shape equation derived from the Helfrich energy		2
32	Mechanical principles governing the shapes of dendritic spines		2
31	Modeling membrane nanotube morphology: the role of heterogeneity in composition and material properties		2
30	Non-uniform distribution of myosin-mediated forces governs red blood cell membrane curvature through tension modulation		2
29	A mechanical model reveals that non-axisymmetric buckling lowers the energy barrier associated with membrane neck constriction		2

28	Nanoscale organization of Actin Filaments in the Red Blood Cell Membrane Skeleton		2
27	Mechanical Principles Governing the Shapes of Dendritic Spines. *Frontiers in Physiology*, **2021**, 12, 657074	4.6	2
26	Curvature-driven feedback on aggregation-diffusion of proteins in lipid bilayers. *Soft Matter*, **2021**, 17, 8373-8386	3.6	2
25	Intracellular Membrane Trafficking: Modeling Local Movements in Cells. *Modeling and Simulation in Science, Engineering and Technology*, **2018**, 259-301	0.8	2
24	Value of models for membrane budding. *Current Opinion in Cell Biology*, **2021**, 71, 38-45	9	2
23	A three-dimensional stochastic spatio-temporal model of cell spreading. *Nature Precedings*, **2007**,		1
22	Nanoscale Dynamics of Actin Filaments in the Red Blood Cell Membrane Skeleton.. *Molecular Biology of the Cell*, **2022**, mbcE21030107	3.5	1
21	Transfer function for YAP/TAZ nuclear translocation revealed through spatial systems modeling		1
20	Biomembranes undergo complex, non-axisymmetric deformations governed by Kirchhoff-Love kinematicsand revealed by a three-dimensional computational framework.. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2021**, 477, 20210246	2.4	1
19	Nanoscale organization of ryanodine receptor distribution and phosphorylation pattern determines the dynamics of calcium sparks		1
18	Morphological principles of neuronal mitochondria. *Journal of Comparative Neurology*, **2021**,	3.4	1
17	An Open Source Mesh Generation Platform for Biophysical Modeling Using Realistic Cellular Geometries		1
16	Stability Analysis of a Signaling Circuit with Dual Species of GTPase Switches. *Bulletin of Mathematical Biology*, **2021**, 83, 34	2.1	1
15	The many faces of membrane tension: Challenges across systems and scales.. *Biochimica Et Biophysica Acta - Biomembranes*, **2022**, 183897	3.8	1
14	Design decisions for incorporating spatial and mechanical aspects in models of signaling networks. *Current Opinion in Systems Biology*, **2021**, 25, 70-77	3.2	0
13	Illuminating Spatiotemporal Regulation of AMPK with a Genetically Encoded Excitation-Ratiometric Biosensor for AMPK. *FASEB Journal*, **2020**, 34, 1-1	0.9	
12	3D mesh processing using GAMer 2 to enable reaction-diffusion simulations in realistic cellular geometries **2020**, 16, e1007756		
11	3D mesh processing using GAMer 2 to enable reaction-diffusion simulations in realistic cellular geometries **2020**, 16, e1007756		

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7 3D mesh processing using GAMer 2 to enable reaction-diffusion simulations in realistic cellular geometries **2020**, 16, e1007756

6 Interactions between calmodulin and neurogranin govern the dynamics of CaMKII as a leaky integrator **2020**, 16, e1008015

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1 Interactions between calmodulin and neurogranin govern the dynamics of CaMKII as a leaky integrator **2020**, 16, e1008015