

# Ravi Radhakrishnan

## List of Publications by Year in descending order

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94  
papers

5,658  
citations

172457

29  
h-index

82547

72  
g-index

103  
all docs

103  
docs citations

103  
times ranked

9093  
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantification of Curvature Sensing Behavior of Curvature-Inducing Proteins on Model Wavy Substrates. <i>Journal of Membrane Biology</i> , 2022, 255, 175-184.	2.1	2
2	Probing lipid membrane bending mechanics using gold nanorod tracking. <i>Physical Review Research</i> , 2022, 4, .	3.6	4
3	Crowding-induced membrane remodeling: Interplay of membrane tension, polymer density, architecture. <i>Biophysical Journal</i> , 2022, 121, 3674-3683.	0.5	6
4	Data driven and biophysical insights into the regulation of trafficking vesicles by extracellular matrix stiffness. <i>IScience</i> , 2022, 25, 104721.	4.1	1
5	A survey of multiscale modeling: Foundations, historical milestones, current status, and future prospects. <i>AIChE Journal</i> , 2021, 67, e17026.	3.6	14
6	An interdomain helix in IRE1 $\beta$ mediates the conformational change required for the sensor's activation. <i>Journal of Biological Chemistry</i> , 2021, 296, 100781.	3.4	5
7	Computational studies of anaplastic lymphoma kinase mutations reveal common mechanisms of oncogenic activation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, e2019132118.	7.1	3
8	Membrane signalosome: Where biophysics meets systems biology. <i>Current Opinion in Systems Biology</i> , 2021, 25, 34-41.	2.6	2
9	Structural Insights into Pseudokinase Domains of Receptor Tyrosine Kinases. <i>FASEB Journal</i> , 2021, 35, .	0.5	0
10	Biophysical Considerations in the Rational Design and Cellular Targeting of Flexible Polymeric Nanoparticles. <i>Advanced Materials Interfaces</i> , 2021, 8, 2101290.	3.7	2
11	Biophysical Considerations in the Rational Design and Cellular Targeting of Flexible Polymeric Nanoparticles ( <i>Adv. Mater. Interfaces</i> 23/2021). <i>Advanced Materials Interfaces</i> , 2021, 8, .	3.7	0
12	ULK1 phosphorylates Exo70 to suppress breast cancer metastasis. <i>Nature Communications</i> , 2020, 11, 117.	12.8	35
13	Multiscale modeling of protein membrane interactions for nanoparticle targeting in drug delivery. <i>Current Opinion in Structural Biology</i> , 2020, 64, 104-110.	5.7	9
14	Dimerization and structure formation of colloids via capillarity at curved fluid interfaces. <i>Soft Matter</i> , 2020, 16, 5861-5870.	2.7	2
15	Structural Insights into Pseudokinase Domains of Receptor Tyrosine Kinases. <i>Molecular Cell</i> , 2020, 79, 390-405.e7.	9.7	56
16	Divalent cations bind to phosphoinositides to induce ion and isomer specific propensities for nano-cluster initiation in bilayer membranes. <i>Royal Society Open Science</i> , 2020, 7, 192208.	2.4	17
17	Understanding and Controlling Food Protein Structure and Function in Foods: Perspectives from Experiments and Computer Simulations. <i>Annual Review of Food Science and Technology</i> , 2020, 11, 365-387.	9.9	33
18	A multiscale biophysical model for the recruitment of actin nucleating proteins at the membrane interface. <i>Soft Matter</i> , 2020, 16, 4941-4954.	2.7	7

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19	Emergent membrane morphologies in relaxed and tense membranes in presence of reversible adhesive pinning interactions. <i>Physical Biology</i> , 2019, 16, 066011.	1.8	10
20	Lateral distribution of phosphatidylinositol 4,5-bisphosphate in membranes regulates formin- and ARP2/3-mediated actin nucleation. <i>Journal of Biological Chemistry</i> , 2019, 294, 4704-4722.	3.4	22
21	Time-dependent antagonist-agonist switching in receptor tyrosine kinase-mediated signaling. <i>BMC Bioinformatics</i> , 2019, 20, 242.	2.6	5
22	Stiffness can mediate balance between hydrodynamic forces and avidity to impact the targeting of flexible polymeric nanoparticles in flow. <i>Nanoscale</i> , 2019, 11, 6916-6928.	5.6	15
23	Nanofluid Dynamics of Flexible Polymeric Nanoparticles Under Wall Confinement. <i>Journal of Heat Transfer</i> , 2019, 141, 0524011-524016.	2.1	5
24	Computational algorithms for in silico profiling of activating mutations in cancer. <i>Cellular and Molecular Life Sciences</i> , 2019, 76, 2663-2679.	5.4	11
25	Nanoparticle transport phenomena in confined flows. <i>Advances in Heat Transfer</i> , 2019, 51, 55-129.	0.9	8
26	Thermodynamic analysis of multivalent binding of functionalized nanoparticles to membrane surface reveals the importance of membrane entropy and nanoparticle entropy in adhesion of flexible nanoparticles. <i>Soft Matter</i> , 2019, 15, 9271-9286.	2.7	7
27	Multivalent Binding of a Ligand-Coated Particle: Role of Shape, Size, and Ligand Heterogeneity. <i>Biophysical Journal</i> , 2018, 114, 1830-1846.	0.5	27
28	Excess area dependent scaling behavior of nano-sized membrane tethers. <i>Physical Biology</i> , 2018, 15, 026002.	1.8	15
29	Rheology of colloidal suspensions in confined flow: Treatment of hydrodynamic interactions in particle-based simulations inspired by dynamical density functional theory. <i>Physical Review E</i> , 2018, 98, .	2.1	12
30	Biophysics of membrane curvature remodeling at molecular and mesoscopic lengthscales. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 273001.	1.8	35
31	Regulation of actin assembly by PI(4,5)P2 and other inositol phospholipids: An update on possible mechanisms. <i>Biochemical and Biophysical Research Communications</i> , 2018, 506, 307-314.	2.1	82
32	Exosomal PD-L1 contributes to immunosuppression and is associated with anti-PD-1 response. <i>Nature</i> , 2018, 560, 382-386.	27.8	1,836
33	Computational Models for Nanoscale Fluid Dynamics and Transport Inspired by Nonequilibrium Thermodynamics1. <i>Journal of Heat Transfer</i> , 2017, 139, 0330011-330019.	2.1	10
34	Mechanisms that determine nanocarrier targeting to healthy versus inflamed lung regions. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2017, 13, 1495-1506.	3.3	34
35	Curvature-Driven Migration of Colloids on Tense Lipid Bilayers. <i>Langmuir</i> , 2017, 33, 600-610.	3.5	16
36	Motion of a nano-spheroid in a cylindrical vessel flow: Brownian and hydrodynamic interactions. <i>Journal of Fluid Mechanics</i> , 2017, 821, 117-152.	3.4	12

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37	Microstructure of Flow-Driven Suspension of Hardspheres in Cylindrical Confinement: A Dynamical Density Functional Theory and Monte Carlo Study. <i>Langmuir</i> , 2017, 33, 11332-11344.	3.5	14
38	Effect of wall-mediated hydrodynamic fluctuations on the kinetics of a Brownian nanoparticle. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20160397.	2.1	5
39	Deletion Mutations Keep Kinase Inhibitors in the Loop. <i>Cancer Cell</i> , 2016, 29, 423-425.	16.8	5
40	Biophysically inspired model for functionalized nanocarrier adhesion to cell surface: roles of protein expression and mechanical factors. <i>Royal Society Open Science</i> , 2016, 3, 160260.	2.4	26
41	Curvature-induced undulation coupling as a basis for curvature sensing and generation in bilayer membranes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E5117-24.	7.1	34
42	Thermodynamic free energy methods to investigate shape transitions in bilayer membranes. <i>International Journal of Advances in Engineering Sciences and Applied Mathematics</i> , 2016, 8, 88-100.	1.1	5
43	Nanoparticle stochastic motion in the inertial regime and hydrodynamic interactions close to a cylindrical wall. <i>Physical Review Fluids</i> , 2016, 1, .	2.5	17
44	Composite generalized Langevin equation for Brownian motion in different hydrodynamic and adhesion regimes. <i>Physical Review E</i> , 2015, 91, 052303.	2.1	25
45	Application of a free-energy-landscape approach to study tension-dependent bilayer tubulation mediated by curvature-inducing proteins. <i>Physical Review E</i> , 2015, 92, 042715.	2.1	15
46	Phenomenology Based Multiscale Models as Tools to Understand Cell Membrane and Organelle Morphologies. <i>Behavior Research Methods</i> , 2015, 22, 129-175.	4.0	4
47	Physical chemistry and membrane properties of two phosphatidylinositol bisphosphate isomers. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 12608-12615.	2.8	12
48	Hydrodynamic interactions of deformable polymeric nanocarriers and the effect of crosslinking. <i>Soft Matter</i> , 2015, 11, 5955-5969.	2.7	13
49	Machine learning predictions of cancer driver mutations. , 2014, 2014, .		1
50	Counterion-mediated pattern formation in membranes containing anionic lipids. <i>Advances in Colloid and Interface Science</i> , 2014, 208, 177-188.	14.7	33
51	Multiscale computational models in physical systems biology of intracellular trafficking. <i>IET Systems Biology</i> , 2014, 8, 198-213.	1.5	26
52	ALK Mutations Confer Differential Oncogenic Activation and Sensitivity to ALK Inhibition Therapy in Neuroblastoma. <i>Cancer Cell</i> , 2014, 26, 682-694.	16.8	302
53	Mesoscale computational studies of membrane bilayer remodeling by curvature-inducing proteins. <i>Physics Reports</i> , 2014, 543, 1-60.	25.6	71
54	Defining the free-energy landscape of curvature-inducing proteins on membrane bilayers. <i>Physical Review E</i> , 2014, 90, 022717.	2.1	20

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55	High-throughput mutagenesis reveals functional determinants for DNA targeting by activation-induced deaminase. <i>Nucleic Acids Research</i> , 2014, 42, 9964-9975.	14.5	17
56	Exo70 Generates Membrane Curvature for Morphogenesis and Cell Migration. <i>Developmental Cell</i> , 2013, 26, 266-278.	7.0	88
57	Temporal multiscale approach for nanocarrier motion with simultaneous adhesion and hydrodynamic interactions in targeted drug delivery. <i>Journal of Computational Physics</i> , 2013, 244, 252-263.	3.8	13
58	Coarse-Grained Models for Protein-Cell Membrane Interactions. <i>Polymers</i> , 2013, 5, 890-936.	4.5	51
59	Molecular modeling of ErbB4/HER4 kinase in the context of the HER4 signaling network helps rationalize the effects of clinically identified HER4 somatic mutations on the cell phenotype. <i>Biotechnology Journal</i> , 2013, 8, 1452-1464.	3.5	13
60	Quantum and All-Atom Molecular Dynamics Simulations of Protonation and Divalent Ion Binding to Phosphatidylinositol 4,5-Bisphosphate (PIP <sub>2</sub> ). <i>Journal of Physical Chemistry B</i> , 2013, 117, 8322-8329.	2.6	38
61	Reduction of Nanoparticle Avidity Enhances the Selectivity of Vascular Targeting and PET Detection of Pulmonary Inflammation. <i>ACS Nano</i> , 2013, 7, 2461-2469.	14.6	94
62	Nanocarrier Hydrodynamics and Binding in Targeted Drug Delivery: Challenges in Numerical Modeling and Experimental Validation. <i>Journal of Nanotechnology in Engineering and Medicine</i> , 2013, 4, 101011-1010115.	0.8	26
63	Multiscale Cancer Modeling and In Silico Oncology: Emerging Computational Frontiers in Basic and Translational Cancer Research. <i>Journal of Bioengineering &amp; Biomedical Science</i> , 2013, 03, .	0.2	6
64	Erlotinib binds both inactive and active conformations of the EGFR tyrosine kinase domain. <i>Biochemical Journal</i> , 2012, 448, 417-423.	3.7	228
65	Modeling of a Nanoparticle Motion in a Newtonian Fluid: A Comparison Between Fluctuating Hydrodynamics and Generalized Langevin Procedures. , 2012, 2012, 735-743.		1
66	Structural Systems Biology and Multiscale Signaling Models. <i>Annals of Biomedical Engineering</i> , 2012, 40, 2295-2306.	2.5	8
67	A hybrid formalism combining fluctuating hydrodynamics and generalized Langevin dynamics for the simulation of nanoparticle thermal motion in an incompressible fluid medium. <i>Molecular Physics</i> , 2012, 110, 1057-1067.	1.7	10
68	Systems biology and physical biology of clathrin-mediated endocytosis. <i>Integrative Biology (United Kingdom)</i> , 2012, 4, 1-13.	1.3	55
69	Multivalent Binding of Nanocarrier to Endothelial Cells under Shear Flow. <i>Biophysical Journal</i> , 2011, 101, 319-326.	0.5	41
70	A multiscale modeling approach to investigate molecular mechanisms of pseudokinase activation and drug resistance in the HER3/ErbB3 receptor tyrosine kinase signaling network. <i>Molecular BioSystems</i> , 2011, 7, 2066.	2.9	32
71	Nanoparticle Brownian motion and hydrodynamic interactions in the presence of flow fields. <i>Physics of Fluids</i> , 2011, 23, 73602-7360215.	4.0	60
72	Analysis of Somatic Mutations in Cancer: Molecular Mechanisms of Activation in the ErbB Family of Receptor Tyrosine Kinases. <i>Cancers</i> , 2011, 3, 1195-1231.	3.7	21

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73	Multiscale Modeling of Functionalized Nanocarriers in Targeted Drug Delivery. <i>Current Nanoscience</i> , 2011, 7, 727-735.	1.2	29
74	Molecular dynamics analysis of conserved hydrophobic and hydrophilic bond-interaction networks in ErbB family kinases. <i>Biochemical Journal</i> , 2011, 436, 241-251.	3.7	27
75	ErbB3/HER3 intracellular domain is competent to bind ATP and catalyze autophosphorylation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 7692-7697.	7.1	395
76	Computational model for nanocarrier binding to endothelium validated using in vivo, in vitro, and atomic force microscopy experiments. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 16530-16535.	7.1	116
77	Minimal Mesoscale Model for Protein-Mediated Vesiculation in Clathrin-Dependent Endocytosis. <i>PLoS Computational Biology</i> , 2010, 6, e1000926.	3.2	47
78	Calculation of free energies in fluid membranes subject to heterogeneous curvature fields. <i>Physical Review E</i> , 2009, 80, 011925.	2.1	17
79	Molecular Dynamics Simulations Reveal that Tyr-317 Phosphorylation Reduces Shc Binding Affinity for Phosphotyrosyl Residues of Epidermal Growth Factor Receptor. <i>Biophysical Journal</i> , 2009, 96, 2278-2288.	0.5	21
80	Atomistic Insights into Regulatory Mechanisms of the HER2 Tyrosine Kinase Domain: A Molecular Dynamics Study. <i>Biophysical Journal</i> , 2009, 96, 2321-2334.	0.5	31
81	Role of Network Branching in Eliciting Differential Short-Term Signaling Responses in the Hypersensitive Epidermal Growth Factor Receptor Mutants Implicated in Lung Cancer. <i>Biotechnology Progress</i> , 2008, 24, 540-553.	2.6	22
82	Molecular systems biology of ErbB1 signaling: bridging the gap through multiscale modeling and high-performance computing. <i>Molecular BioSystems</i> , 2008, 4, 1151.	2.9	25
83	Landscape of finite-temperature equilibrium behaviour of curvature-inducing proteins on a bilayer membrane explored using a linearized elastic free energy model. <i>Molecular Physics</i> , 2008, 106, 1913-1923.	1.7	15
84	The Role of Glycocalyx in Nanocarrier-Cell Adhesion Investigated Using a Thermodynamic Model and Monte Carlo Simulations. <i>Journal of Physical Chemistry C</i> , 2007, 111, 15848-15856.	3.1	44
85	Coupling of Fast and Slow Modes in the Reaction Pathway of the Minimal Hammerhead Ribozyme Cleavage. <i>Biophysical Journal</i> , 2007, 93, 2391-2399.	0.5	20
86	Regulation of DNA Repair Fidelity by Molecular Checkpoints: "Gates" in DNA Polymerase $\beta$ 's Substrate Selection. <i>Biochemistry</i> , 2006, 45, 15142-15156.	2.5	66
87	Correct and incorrect nucleotide incorporation pathways in DNA polymerase $\beta$ . <i>Biochemical and Biophysical Research Communications</i> , 2006, 350, 521-529.	2.1	52
88	"KMC-TDGL" a coarse-grained methodology for simulating interfacial dynamics in complex fluids: application to protein-mediated membrane processes. <i>Molecular Physics</i> , 2006, 104, 3653-3666.	1.7	13
89	Effects of confinement on freezing and melting. <i>Journal of Physics Condensed Matter</i> , 2006, 18, R15-R68.	1.8	614
90	Fidelity Discrimination in DNA Polymerase $\beta$ : Differing Closing Profiles for a Mismatched (G:A) versus Matched (G:C) Base Pair. <i>Journal of the American Chemical Society</i> , 2005, 127, 13245-13252.	13.7	69

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91	Orchestration of cooperative events in DNA synthesis and repair mechanism unraveled by transition path sampling of DNA polymerase $\beta$ 's closing. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 5970-5975.	7.1	146
92	Biomolecular free energy profiles by a shooting/umbrella sampling protocol, "BOLAS". Journal of Chemical Physics, 2004, 121, 2436-2444.	3.0	62
93	Phase separation in confined systems. Reports on Progress in Physics, 2000, 63, 727-727.	20.1	28
94	Multiphysics pharmacokinetic model for targeted nanoparticles. Frontiers in Medical Technology, 0, 4, .	2.5	1