Arup K Chakraborty

List of Publications by Year
in descending order

63 papers	8,524 citations	147801 31 h-index	133252 59 g-index
80 all docs	80 docs citations	80 times ranked	11626 citing authors

#	Article	IF	Citations
1	A simple model for how the risk of pandemics from different virus families depends on viral and human traits. Mathematical Biosciences, 2022, 343, 108732.	1.9	2
2	RNA in formation and regulation of transcriptional condensates. Rna, 2022, 28, 52-57.	3.5	55
3	Inferring the intrinsic mutational fitness landscape of influenzalike evolving antigens from temporally ordered sequence data. Physical Review E, 2022, 105, 024401.	2.1	0
4	Multiscale affinity maturation simulations to elicit broadly neutralizing antibodies against HIV. PLoS Computational Biology, 2022, 18, e1009391.	3.2	6
5	RNA-Mediated Feedback Control of Transcriptional Condensates. Cell, 2021, 184, 207-225.e24.	28.9	324
6	Adenovirus-vectored vaccine containing multidimensionally conserved parts of the HIV proteome is immunogenic in rhesus macaques. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	8
7	Design of immunogens to elicit broadly neutralizing antibodies against HIV targeting the CD4 binding site. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	6
8	Learning from HIV-1 to predict the immunogenicity of TÂcell epitopes in SARS-CoV-2. IScience, 2021, 24, 102311.	4.1	11
9	Roadmap on biology in time varying environments. Physical Biology, 2021, 18, 041502.	1.8	23
10	Mechanisms underlying vaccination protocols that may optimally elicit broadly neutralizing antibodies against highly mutable pathogens. Physical Review E, 2021, 103, 052408.	2.1	15
11	Defining and Manipulating B Cell Immunodominance Hierarchies to Elicit Broadly Neutralizing Antibody Responses against Influenza Virus. Cell Systems, 2020, 11, 573-588.e9.	6.2	41
12	How the T cell signaling network processes information to discriminate between self and agonist ligands. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 26020-26030.	7.1	39
13	Optimizing immunization protocols to elicit broadly neutralizing antibodies. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 20077-20087.	7.1	35
14	Partitioning of cancer therapeutics in nuclear condensates. Science, 2020, 368, 1386-1392.	12.6	281
15	Deconvolving mutational patterns of poliovirus outbreaks reveals its intrinsic fitness landscape. Nature Communications, 2020, 11, 377.	12.8	25
16	Predominance of positive epistasis among drug resistance-associated mutations in HIV-1 protease. PLoS Genetics, 2020, 16, e1009009.	3.5	25
17	Enhancer Features that Drive Formation of Transcriptional Condensates. Molecular Cell, 2019, 75, 549-561.e7.	9.7	284
18	Modelling and in vitro testing of the HIV-1 Nef fitness landscape. Virus Evolution, 2019, 5, vez029.	4.9	11

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19	Alternative ZAP70-p38 signals prime a classical p38 pathway through LAT and SOS to support regulatory T cell differentiation. Science Signaling, 2019, 12, .	3.6	11
20	CD45 functions as a signaling gatekeeper in T cells. Science Signaling, 2019, 12, .	3.6	81
21	Fitness landscape of the human immunodeficiency virus envelope protein that is targeted by antibodies. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E564-E573.	7.1	101
22	How nonuniform contact profiles of T cell receptors modulate thymic selection outcomes. Physical Review E, 2018, 97, 032413.	2.1	7
23	Evolution of weak cooperative interactions for biological specificity. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E11053-E11060.	7.1	34
24	The low spike density of HIV may have evolved because of the effects of T helper cell depletion on affinity maturation. PLoS Computational Biology, 2018, 14, e1006408.	3.2	18
25	Coactivator condensation at super-enhancers links phase separation and gene control. Science, 2018, 361, .	12.6	1,687
26	Role of framework mutations and antibody flexibility in the evolution of broadly neutralizing antibodies. ELife, 2018, 7, .	6.0	72
27	Rational design of vaccine targets and strategies for HIV: a crossroad of statistical physics, biology, and medicine. Reports on Progress in Physics, 2017, 80, 032601.	20.1	20
28	A Perspective on the Role of Computational Models in Immunology. Annual Review of Immunology, 2017, 35, 403-439.	21.8	40
29	A Phase Separation Model for Transcriptional Control. Cell, 2017, 169, 13-23.	28.9	1,341
30	Continuous immunotypes describe human immune variation and predict diverse responses. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E6097-E6106.	7.1	104
31	Phosphorylation of a Tyrosine Residue on Zap70 by Lck and Its Subsequent Binding via an SH2 Domain May Be a Key Gatekeeper of T Cell Receptor Signaling In Vivo. Molecular and Cellular Biology, 2016, 36, 2396-2402.	2.3	38
32	Enhanced clearance of HIV-1â€“infected cells by broadly neutralizing antibodies against HIV-1 in vivo. Science, 2016, 352, 1001-1004.	12.6	302
33	Sustained antigen availability during germinal center initiation enhances antibody responses to vaccination. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6639-E6648.	7.1	286
34	Paired quantitative and qualitative assessment of the replication-competent HIV-1 reservoir and comparison with integrated proviral DNA. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7908-E7916.	7.1	164
35	Identification of drug resistance mutations in HIV from constraints on natural evolution. Physical Review E, 2016, 93, 022412.	2.1	31
36	Optimal immunization cocktails can promote induction of broadly neutralizing Abs against highly mutable pathogens. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7039-E7048.	7.1	53

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37	Theory, models and biology. ELife, 2015, 4, e07158.	6.0	73
38	Affinity Inequality among Serum Antibodies That Originate in Lymphoid Germinal Centers. PLoS ONE, 2015, 10, e0139222.	2.5	11
39	The catalytic activity of the kinase ZAP-70 mediates basal signaling and negative feedback of the T cell receptor pathway. Science Signaling, 2015, 8, ra49.	3.6	50
40	Manipulating the Selection Forces during Affinity Maturation to Generate Cross-Reactive HIV Antibodies. Cell, 2015, 160, 785-797.	28.9	173
41	Scaling laws describe memories of hostâ€“pathogen riposte in the HIV population. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1965-1970.	7.1	32
42	Herman N. Eisen, M.D. (1918â€“2014). Journal of Immunology, 2015, 194, 2451-2452.	0.8	0
43	Magnitude and Kinetics of CD8+ T Cell Activation during Hyperacute HIV Infection Impact Viral Set Point. Immunity, 2015, 43, 591-604.	14.3	234
44	The Fitness Landscape of HIV-1 Gag: Advanced Modeling Approaches and Validation of Model Predictions by In Vitro Testing. PLoS Computational Biology, 2014, 10, e1003776.	3.2	125
45	Understanding immunology: fun at an intersection of the physical, life, and clinical sciences. Physical Biology, 2014, 11, 053014.	1.8	0
46	Insights into the initiation of TCR signaling. Nature Immunology, 2014, 15, 798-807.	14.5	307
47	Coreceptor Scanning by the T Cell Receptor Provides a Mechanism for T Cell Tolerance. Cell, 2014, 159, 333-345.	28.9	155
48	Ras activation by SOS: Allosteric regulation by altered fluctuation dynamics. Science, 2014, 345, 50-54.	12.6	126
49	Statistical Linkage Analysis of Substitutions in Patient-Derived Sequences of Genotype 1a Hepatitis C Virus Nonstructural Protein 3 Exposes Targets for Immunogen Design. Journal of Virology, 2014, 88, 7628-7644.	3.4	34
50	Therapeutic efficacy of potent neutralizing HIV-1-specific monoclonal antibodies in SHIV-infected rhesus monkeys. Nature, 2013, 503, 224-228.	27.8	593
51	Statistical Physics of T-Cell Development and Pathogen Specificity. Annual Review of Condensed Matter Physics, 2013, 4, 339-360.	14.5	4
52	The Effects of Somatic Hypermutation on Neutralization and Binding in the PGT121 Family of Broadly Neutralizing HIV Antibodies. PLoS Pathogens, 2013, 9, e1003754.	4.7	175
53	Activation of Extracellular Signal-Regulated Kinase but Not of p38 Mitogen-Activated Protein Kinase Pathways in Lymphocytes Requires Allosteric Activation of SOS. Molecular and Cellular Biology, 2013, 33, 2470-2484.	2.3	19
54	Spin models inferred from patient-derived viral sequence data faithfully describe HIV fitness landscapes. Physical Review E, 2013, 88, 062705.	2.1	78

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55	The Influence of T Cell Development on Pathogen Specificity and Autoreactivity. Journal of Statistical Physics, 2012, 149, 203-219.	1.2	4
56	Pairing computation with experimentation: a powerful coupling for understanding T cell signalling. Nature Reviews Immunology, 2010, 10, 59-71.	22.7	55
57	Evolving concepts of specificity in immune reactions. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22373-22380.	7.1	92
58	Statistical Mechanical Concepts in Immunology. Annual Review of Physical Chemistry, 2010, 61, 283-303.	10.8	34
59	Digital Signaling and Hysteresis Characterize Ras Activation in Lymphoid Cells. Cell, 2009, 136, 337-351.	28.9	362
60	The Balance between T Cell Receptor Signaling and Degradation at the Center of the Immunological Synapse Is Determined by Antigen Quality. Immunity, 2008, 29, 414-422.	14.3	126
61	Importance of signal duration and the time scale dependence of signal integration in biochemical networks. FASEB Journal, 2008, 22, 616.2.	0.5	0
62	Scaffold Proteins Confer Diverse Regulatory Properties to Protein Kinase Cascades. FASEB Journal, 2007, 21, A264.	0.5	0
63	Phase behavior of random copolymers in quenched random media. Journal of Chemical Physics, 1995, 103, 10751-10763.	3.0	27