Upinder S Bhalla

List of Publications by Year
in descending order

95 papers	6,782 citations	117625 34 h-index	64796 79 g-index
115 all docs	115 docs citations	115 times ranked	5879 citing authors

#	Article	IF	Citations
1	MOOSE, the Multiscale Object-Oriented Simulation Environment. , 2022, , 2086-2089.		0
2	SWITCHES: Searchable Web Interface for Topologies of CHEmical Switches. Bioinformatics, 2021, 37, 2504-2505.	4.1	0
3	An Early Cortical Progenitor-Specific Mechanism Regulates Thalamocortical Innervation. Journal of Neuroscience, 2021, 41, 6822-6835.	3.6	10
4	Physiology and Therapeutic Potential of SK, H, and M Medium AfterHyperPolarization Ion Channels. Frontiers in Molecular Neuroscience, 2021, 14, 658435.	2.9	7
5	Adult brain neurons require continual expression of the schizophrenia-risk gene Tcf4 for structural and functional integrity. Translational Psychiatry, 2021, 11, 494.	4.8	7
6	Computation, wiring, and plasticity in synaptic clusters. Current Opinion in Neurobiology, 2021, 70, 101-112.	4.2	5
7	Cross-diagnostic evaluation of minor physical anomalies in psychiatric disorders. Journal of Psychiatric Research, 2021, 142, 54-62.	3.1	7
8	Patterned Optogenetic Stimulation Using a DMD Projector. Methods in Molecular Biology, 2021, 2191, 173-188.	0.9	5
9	HillTau: A fast, compact abstraction for model reduction in biochemical signaling networks. PLoS Computational Biology, 2021, 17, e1009621.	3.2	2
10	Exome sequencing in families with severe mental illness identifies novel and rare variants in genes implicated in Mendelian neuropsychiatric syndromes. Psychiatry and Clinical Neurosciences, 2019, 73, 11-19.	1.8	31
11	Dendrites, deep learning, and sequences in the hippocampus. Hippocampus, 2019, 29, 239-251.	1.9	12
12	Impaired Reliability and Precision of Spiking in Adults But Not Juveniles in a Mouse Model of Fragile X Syndrome. ENeuro, 2019, 6, ENEURO.0217-19.2019.	1.9	5
13	Precise excitation-inhibition balance controls gain and timing in the hippocampus. ELife, 2019, 8, .	6.0	76
14	FindSim: A Framework for Integrating Neuronal Data and Signaling Models. Frontiers in Neuroinformatics, 2018, 12, 38.	2.5	8
15	Subunit exchange enhances information retention by CaMKII in dendritic spines. ELife, 2018, 7, .	6.0	18
16	Multirate method for co-simulation of electrical-chemical systems in multiscale modeling. Journal of Computational Neuroscience, 2017, 42, 245-256.	1.0	2
17	Synaptic input sequence discrimination on behavioral timescales mediated by reaction-diffusion chemistry in dendrites. ELife, 2017, 6, .	6.0	26
18	Efficient Integration of Coupled Electrical-Chemical Systems in Multiscale Neuronal Simulations. Frontiers in Computational Neuroscience, 2016, 10, 97.	2.1	5

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19	Role of DARPP-32 and ARPP-21 in the Emergence of Temporal Constraints on Striatal Calcium and Dopamine Integration. PLoS Computational Biology, 2016, 12, e1005080.	3.2	29
20	NSDF: Neuroscience Simulation Data Format. Neuroinformatics, 2016, 14, 147-167.	2.8	19
21	Minority odors get equal say. ELife, 2016, 5, .	6.0	0
22	Spike Detection for Large Neural Populations Using High Density Multielectrode Arrays. Frontiers in Neuroinformatics, 2015, 9, 28.	2.5	48
23	Bulbar Microcircuit Model Predicts Connectivity and Roles of Interneurons in Odor Coding. PLoS ONE, 2015, 10, e0098045.	2.5	16
24	Olfactory bulb coding of odors, mixtures and sniffs is a linear sum of odor time profiles. Nature Neuroscience, 2015, 18, 272-281.	14.8	55
25	Robust and Rapid Air-Borne Odor Tracking without Casting. ENeuro, 2015, 2, ENEURO.0102-15.2015.	1.9	35
26	MOOSE, the Multiscale Object-Oriented Simulation Environment. , 2015, , 1751-1754.		0
27	Multiscale Modeling and Synaptic Plasticity. Progress in Molecular Biology and Translational Science, 2014, 123, 351-386.	1.7	9
28	Molecular computation in neurons: a modeling perspective. Current Opinion in Neurobiology, 2014, 25, 31-37.	4.2	41
29	Transcription Control Pathways Decode Patterned Synaptic Inputs into Diverse mRNA Expression Profiles. PLoS ONE, 2014, 9, e95154.	2.5	6
30	CA1 cell activity sequences emerge after reorganization of network correlation structure during associative learning. ELife, 2014, 3, e01982.	6.0	87
31	Laterality and Symmetry in Rat Olfactory Behavior and in Physiology of Olfactory Input. Journal of Neuroscience, 2013, 33, 5750-5760.	3.6	26
32	Theta Frequency Background Tunes Transmission but Not Summation of Spiking Responses. PLoS ONE, 2013, 8, e55607.	2.5	0
33	Still Looking for the Memories: Molecules and Synaptic Plasticity. , 2013, , 187-205.		1
34	Database of Quantitative Cellular Signaling (DOQCS). , 2013, , 534-537.		0
35	Rats track odour trails accurately using a multi-layered strategy with near-optimal sampling. Nature Communications, 2012, 3, 703.	12.8	98
36	Summation in the Hippocampal CA3-CA1 Network Remains Robustly Linear Following Inhibitory Modulation and Plasticity, but Undergoes Scaling and Offset Transformations. Frontiers in Computational Neuroscience, 2012, 6, 71.	2.1	4

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37	Trafficking Motifs as the Basis for Two-Compartment Signaling Systems to Form Multiple Stable States. Biophysical Journal, 2011, 101, 21-32.	0.5	9
38	Multiscale interactions between chemical and electric signaling in LTP induction, LTP reversal and dendritic excitability. Neural Networks, 2011, 24, 943-949.	5.9	22
39	Connecting MOOSE and NeuroRD through MUSIC: towards a communication framework for multi-scale modeling. BMC Neuroscience, 2011, 12, P77.	1.9	10
40	Minimum Information About a Simulation Experiment (MIASE). PLoS Computational Biology, 2011, 7, e1001122.	3.2	133
41	Run-Time Interoperability Between Neuronal Network Simulators Based on the MUSIC Framework. Neuroinformatics, 2010, 8, 43-60.	2.8	88
42	Biophysical model of odor representation and processing in the rat olfactory bulb. BMC Neuroscience, 2010, 11, .	1.9	0
43	Odor representations in the mammalian olfactory bulb. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2010, 2, 603-611.	6.6	15
44	Non-redundant odor coding by sister mitral cells revealed by light addressable glomeruli in the mouse. Nature Neuroscience, 2010, 13, 1404-1412.	14.8	214
45	NeuroML: A Language for Describing Data Driven Models of Neurons and Networks with a High Degree of Biological Detail. PLoS Computational Biology, 2010, 6, e1000815.	3.2	294
46	Signaling Logic of Activity-Triggered Dendritic Protein Synthesis: An mTOR Gate But Not a Feedback Switch. PLoS Computational Biology, 2009, 5, e1000287.	3.2	34
47	Multiscale modeling and interoperability in MOOSE. BMC Neuroscience, 2009, 10, P54.	1.9	7
48	Computing with Proteins. Computer, 2009, 42, 47-56.	1.1	16
49	Molecules, Networks, and Memory. , 2009, , 151-158.		2
50	Reaction-Diffusion Modeling. , 2009, , 61-92.		4
51	A general biological simulator: the multiscale object oriented simulation environment, MOOSE. BMC Neuroscience, 2008, 9, P93.	1.9	18
52	Odor Representations in the Rat Olfactory Bulb Change Smoothly with Morphing Stimuli. Neuron, 2008, 57, 571-585.	8.1	47
53	How To Record a Million Synaptic Weights in a Hippocampal Slice. PLoS Computational Biology, 2008, 4, e1000098.	3.2	7
54	Memory Switches in Chemical Reaction Space. PLoS Computational Biology, 2008, 4, e1000122.	3.2	44

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55	The network and the synapse: 100 years after Cajal. HFSP Journal, 2008, 2, 12-16.	2.5	5
56	Functional Modules in Biological Signalling Networks. Novartis Foundation Symposium, 2008, 239, 4-15.	1.1	24
57	PyMOOSE: Interoperable scripting in Python for MOOSE. Frontiers in Neuroinformatics, 2008, 2, 6.	2.5	81
58	A propagating ERKII switch forms zones of elevated dendritic activation correlated with plasticity. HFSP Journal, 2007, 1, 49-66.	2.5	30
59	Interoperability of Neuroscience Modeling Software: Current Status and Future Directions. Neuroinformatics, 2007, 5, 127-138.	2.8	68
60	Rats Smell in Stereo. Science, 2006, 311, 666-670.	12.6	173
61	Synaptic Plasticity In Vitro and In Silico: Insights into an Intracellular Signaling Maze. Physiology, 2006, 21, 289-296.	3.1	8
62	Systems modeling: a pathway to drug discovery. Current Opinion in Chemical Biology, 2005, 9, 400-406.	6.1	65
63	Minimum information requested in the annotation of biochemical models (MIRIAM). Nature Biotechnology, 2005, 23, 1509-1515.	17.5	553
64	Molecular Switches at the Synapse Emerge from Receptor and Kinase Traffic. PLoS Computational Biology, 2005, 1, e20.	3.2	115
65	Electronic Data Sources for Kinetic Models of Cell Signaling. Journal of Biochemistry, 2005, 137, 653-657.	1.7	8
66	Developing Complex Signaling Models Using GENESIS/Kinetikit. Science Signaling, 2004, 2004, pl4-pl4.	3.6	23
67	Kinetic measurement of ribosome motor stalling force. Applied Physics Letters, 2004, 85, 4789-4791.	3.3	9
68	Adaptive stochastic-deterministic chemical kinetic simulations. Bioinformatics, 2004, 20, 78-84.	4.1	56
69	A role for ERKII in synaptic pattern selectivity on the time-scale of minutes. European Journal of Neuroscience, 2004, 20, 2671-2680.	2.6	61
70	A Spectrum of Models of Signaling Pathways. ChemBioChem, 2004, 5, 1365-1374.	2.6	31
71	A Spectrum of Models of Signaling Pathways. ChemInform, 2004, 35, no.	0.0	0
72	Signaling in Small Subcellular Volumes. I. Stochastic and Diffusion Effects on Individual Pathways. Biophysical Journal, 2004, 87, 733-744.	0.5	130

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73	Signaling in Small Subcellular Volumes. II. Stochastic and Diffusion Effects on Synaptic Network Properties. Biophysical Journal, 2004, 87, 745-753.	0.5	91
74	Models of cell signaling pathways. Current Opinion in Genetics and Development, 2004, 14, 375-381.	3.3	40
75	Managing models of signaling networks. Neurocomputing, 2003, 52-54, 215-220.	5.9	1
76	Understanding complex signaling networks through models and metaphors. Progress in Biophysics and Molecular Biology, 2003, 81, 45-65.	2.9	82
77	Temporal computation by synaptic signaling pathways. Journal of Chemical Neuroanatomy, 2003, 26, 81-86.	2.1	6
78	The Database of Quantitative Cellular Signaling: management and analysis of chemical kinetic models of signaling networks. Bioinformatics, 2003, 19, 408-415.	4.1	110
79	Representation of Odor Habituation and Timing in the Hippocampus. Journal of Neuroscience, 2003, 23, 1903-1915.	3.6	34
80	The chemical organization of signaling interactions. Bioinformatics, 2002, 18, 855-863.	4.1	22
81	Use of Kinetikit and GENESIS for Modeling Signaling Pathways. Methods in Enzymology, 2002, 345, 3-23.	1.0	37
82	Simulations of Inositol Phosphate Metabolism and Its Interaction with InsP3-Mediated Calcium Release. Biophysical Journal, 2002, 83, 1298-1316.	0.5	50
83	Mechanisms for Temporal Tuning and Filtering by Postsynaptic Signaling Pathways. Biophysical Journal, 2002, 83, 740-752.	0.5	34
84	MAP Kinase Phosphatase As a Locus of Flexibility in a Mitogen-Activated Protein Kinase Signaling Network. Science, 2002, 297, 1018-1023.	12.6	601
85	Biochemical signaling networks decode temporal patterns of synaptic input. Journal of Computational Neuroscience, 2002, 13, 49-62.	1.0	38
86	Robustness of the bistable behavior of a biological signaling feedback loop. Chaos, 2001, 11, 221.	2.5	78
87	Emergent Properties of Networks of Biological Signaling Pathways. Science, 1999, 283, 381-387.	12.6	1,445
88	Complexity in Biological Signaling Systems. Science, 1999, 284, 92-96.	12.6	554
89	The Network Within: Signaling Pathways. , 1998, , 169-191.		7
90	Multiday recordings from olfactory bulb neurons in awake freely moving rats: spatially and temporally organized variability in odorant response properties. Journal of Computational Neuroscience, 1997, 4, 221-256.	1.0	94

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91	Advanced XODUS Techniques: Simulation Visualization. , 1995, , 337-362.		0
92	Lateralization of membrane-associated protein kinase C in rat piriform cortex: Specific to operant training cues in the olfactory modality. Behavioural Brain Research, 1994, 61, 37-46.	2.2	20
93	Exploring parameter space in detailed single neuron models: simulations of the mitral and granule cells of the olfactory bulb. Journal of Neurophysiology, 1993, 69, 1948-1965.	1.8	210
94	Rallpacks: a set of benchmarks for neuronal simulators. Trends in Neurosciences, 1992, 15, 453-458.	8.6	87
95	Combining hypothesis- and data-driven neuroscience modeling in FAIR workflows. ELife, 0, 11, .	6.0	15