Michelle Girvan

List of Publications by Year
in descending order

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57 papers	15,471 citations	304368 22 h-index	174990 52 g-index
61 all docs	61 docs citations	61 times ranked	13499 citing authors

#	Article	IF	Citations
1	Community structure in social and biological networks. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 7821-7826.	3.3	11,888
2	Model-Free Prediction of Large Spatiotemporally Chaotic Systems from Data: A Reservoir Computing Approach. Physical Review Letters, 2018, 120, 024102.	2.9	712
3	Policing stabilizes construction of social niches in primates. Nature, 2006, 439, 426-429.	13.7	545
4	Using machine learning to replicate chaotic attractors and calculate Lyapunov exponents from data. Chaos, 2017, 27, 121102.	1.0	376
5	Structure of growing social networks. Physical Review E, 2001, 64, 046132.	0.8	347
6	Hybrid forecasting of chaotic processes: Using machine learning in conjunction with a knowledge-based model. Chaos, 2018, 28, 041101.	1.0	212
7	Reservoir observers: Model-free inference of unmeasured variables in chaotic systems. Chaos, 2017, 27, 041102.	1.0	200
8	The effect of network topology on the stability of discrete state models of genetic control. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 8209-8214.	3.3	85
9	Spectral properties of networks with community structure. Physical Review E, 2009, 80, 056114.	0.8	84
10	Simple model of epidemics with pathogen mutation. Physical Review E, 2002, 65, 031915.	0.8	81
11	Predicting Maximum Tree Heights and Other Traits from Allometric Scaling and Resource Limitations. PLoS ONE, 2011, 6, e20551.	1.1	76
12	Onset of irreversibility in cyclic shear of granular packings. Physical Review E, 2012, 85, 021309.	0.8	63
13	Resynchronization of circadian oscillators and the east-west asymmetry of jet-lag. Chaos, 2016, 26, 094811.	1.0	58
14	Annotation Enrichment Analysis: An Alternative Method for Evaluating the Functional Properties of Gene Sets. Scientific Reports, 2014, 4, 4191.	1.6	56
15	Optimal Design, Robustness, and Risk Aversion. Physical Review Letters, 2002, 89, 028301.	2.9	55
16	Combining machine learning with knowledge-based modeling for scalable forecasting and subgrid-scale closure of large, complex, spatiotemporal systems. Chaos, 2020, 30, 053111.	1.0	54
17	Continuous versus Discontinuous Transitions in the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>D</mml:mi></mml:mrow></mml:math> -Dimensional Generalized Kuramoto Model: Odd <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>D</mml:mi></mml:mrow></mml:math> is Different. Physical Review X, 2019, 9, .	2.8	40
18	Dynamical transitions in large systems of mean field-coupled Landau-Stuart oscillators: Extensive chaos and cluster states. Chaos, 2015, 25, 123122.	1.0	36

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19	Using machine learning to predict statistical properties of non-stationary dynamical processes: System climate,regime transitions, and the effect of stochasticity. Chaos, 2021, 31, 033149.	1.0	36
20	Multiscale dynamics in communities of phase oscillators. Chaos, 2012, 22, 013102.	1.0	28
21	Separation of chaotic signals by reservoir computing. Chaos, 2020, 30, 023123.	1.0	28
22	Local synchronization in complex networks of coupled oscillators. Chaos, 2011, 21, 025109.	1.0	27
23	Modeling the network dynamics of pulse-coupled neurons. Chaos, 2017, 27, 033102.	1.0	24
24	The myopia of crowds: Cognitive load and collective evaluation of answers on Stack Exchange. PLoS ONE, 2017, 12, e0173610.	1.1	24
25	Complexity reduction ansatz for systems of interacting orientable agents: Beyond the Kuramoto model. Chaos, 2019, 29, 053107.	1.0	23
26	Using data assimilation to train a hybrid forecast system that combines machine-learning and knowledge-based components. Chaos, 2021, 31, 053114.	1.0	23
27	Echo phenomena in large systems of coupled oscillators. Chaos, 2008, 18, 037115.	1.0	22
28	Topological properties of chromosome conformation graphs reflect spatial proximities within chromatin. , 2013, , .		21
29	Competing opinions and stubborness: Connecting models to data. Physical Review E, 2016, 93, 032305.	0.8	20
30	Single-cell systems biology: Probing the basic unit of information flow. Current Opinion in Systems Biology, 2018, 8, 7-15.	1.3	19
31	Dynamical Instability in Boolean Networks as a Percolation Problem. Physical Review Letters, 2012, 109, 085701.	2.9	16
32	Analysis of multiple physical parameters for mechanical phenotyping of living cells. European Biophysics Journal, 2013, 42, 383-394.	1.2	16
33	Parallel Machine Learning for Forecasting the Dynamics of Complex Networks. Physical Review Letters, 2022, 128, 164101.	2.9	16
34	Modeling the Dynamics of Bivalent Histone Modifications. PLoS ONE, 2013, 8, e77944.	1.1	15
35	Stability of Boolean networks: The joint effects of topology and update rules. Physical Review E, 2014, 90, 022814.	0.8	14
36	Similarity Learning and Generalization with Limited Data: A Reservoir Computing Approach. Complexity, 2018, 2018, 1-15.	0.9	13

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37	Finding New Order in Biological Functions from the Network Structure of Gene Annotations. PLoS Computational Biology, 2015, 11, e1004565.	1.5	11
38	Interpreting Patterns of Gene Expression: Signatures of Coregulation, the Data Processing Inequality, and Triplet Motifs. PLoS ONE, 2012, 7, e31969.	1.1	11
39	A pathway-centric view of spatial proximity in the 3D nucleome across cell lines. Scientific Reports, 2016, 6, 39279.	1.6	10
40	Reversibility of granular rotations and translations. Physical Review E, 2019, 100, 042905.	0.8	10
41	Predictability of User Behavior in Social Media: Bottom-Up v. Top-Down Modeling. , 2013, , .		8
42	Spatially embedded growing small-world networks. Scientific Reports, 2015, 4, 7047.	1.6	8
43	Map model for synchronization of systems of many coupled oscillators. Chaos, 2010, 20, 023109.	1.0	7
44	Implications of functional similarity for gene regulatory interactions. Journal of the Royal Society Interface, 2012, 9, 1625-1636.	1.5	7
45	Forecasting High Tide. , 2015, , .		7
46	Consequences of Anomalous Diffusion in Disordered Systems under Cyclic Forcing. Physical Review Letters, 2014, 112, 228001.	2.9	5
47	Inferring models of opinion dynamics from aggregated jury data. PLoS ONE, 2019, 14, e0218312.	1.1	5
48	An integrated model for interdisciplinary graduate education: Computation and mathematics for biological networks. PLoS ONE, 2021, 16, e0257872.	1.1	5
49	A network function-based definition of communities in complex networks. Chaos, 2012, 22, 033129.	1.0	4
50	Impact of imperfect information on network attack. Physical Review E, 2015, 91, 032807.	0.8	4
51	Stability of Boolean networks with generalized canalizing rules. Physical Review E, 2012, 85, 046106.	0.8	3
52	Inhibitory neurons promote robust critical firing dynamics in networks of integrate-and-fire neurons. Physical Review E, 2016, 94, 062309.	0.8	3
53	Critical network cascades with re-excitable nodes: Why treelike approximations usually work, when they break down, and how to correct them. Physical Review E, 2020, 101, 062304.	0.8	3
54	Universality Under Conditions of Self-tuning. Journal of Statistical Physics, 2010, 141, 53-59.	0.5	1

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55	Phase transitions and assortativity in models of gene regulatory networks evolved under different selection processes. Journal of the Royal Society Interface, 2021, 18, 20200790.	1.5	1
56	Competing Opinions and Stubbornness: Connecting Models to Data. SSRN Electronic Journal, 0, , .	0.4	1
57	Deep-Readout Random Recurrent Neural Networks for Real-World Temporal Data. SN Computer Science, 2022, 3, 1.	2.3	1