Michelle Girvan

List of Publications by Citations

58 papers	11,401 citations	20 h-index	61 g-index
61 ext. papers	13,694 ext. citations	4.6 avg, IF	6.7 L-index

#	Paper	IF	Citations
58	Community structure in social and biological networks. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 7821-6	11.5	8920
57	Policing stabilizes construction of social niches in primates. *Nature*, **2006**, 439, 426-9	50.4	467
56	Model-Free Prediction of Large Spatiotemporally Chaotic Systems from Data: A Reservoir Computing Approach. *Physical Review Letters*, **2018**, 120, 024102	7.4	398
55	Structure of growing social networks. *Physical Review E*, **2001**, 64, 046132	2.4	278
54	Using machine learning to replicate chaotic attractors and calculate Lyapunov exponents from data. *Chaos*, **2017**, 27, 121102	3.3	217
53	Reservoir observers: Model-free inference of unmeasured variables in chaotic systems. *Chaos*, **2017** , 27, 041102	3.3	128
52	Hybrid forecasting of chaotic processes: Using machine learning in conjunction with a knowledge-based model. *Chaos*, **2018**, 28, 041101	3.3	125
51	Spectral properties of networks with community structure. *Physical Review E*, **2009**, 80, 056114	2.4	75
50	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, 8209-14	11.5	72
49	Simple model of epidemics with pathogen mutation. *Physical Review E*, **2002**, 65, 031915	2.4	70
48	Predicting maximum tree heights and other traits from allometric scaling and resource limitations. *PLoS ONE*, **2011**, 6, e20551	3.7	63
47	Onset of irreversibility in cyclic shear of granular packings. *Physical Review E*, **2012**, 85, 021309	2.4	59
46	Optimal design, robustness, and risk aversion. *Physical Review Letters*, **2002**, 89, 028301	7.4	47
45	Annotation enrichment analysis: an alternative method for evaluating the functional properties of gene sets. *Scientific Reports*, **2014**, 4, 4191	4.9	44
44	Resynchronization of circadian oscillators and the east-west asymmetry of jet-lag. *Chaos*, **2016**, 26, 094811	3.3	39
43	Combining machine learning with knowledge-based modeling for scalable forecasting and subgrid-scale closure of large, complex, spatiotemporal systems. *Chaos*, **2020**, 30, 053111	3.3	29
42	Dynamical transitions in large systems of mean field-coupled Landau-Stuart oscillators: Extensive chaos and cluster states. *Chaos*, **2015**, 25, 123122	3.3	29

41	Local synchronization in complex networks of coupled oscillators. *Chaos*, **2011**, 21, 025109	3.3	24
40	Multiscale dynamics in communities of phase oscillators. *Chaos*, **2012**, 22, 013102	3.3	24
39	Modeling the network dynamics of pulse-coupled neurons. *Chaos*, **2017**, 27, 033102	3.3	20
38	Competing opinions and stubborness: Connecting models to data. *Physical Review E*, **2016**, 93, 032305	2.4	18
37	Continuous versus Discontinuous Transitions in the D-Dimensional Generalized Kuramoto Model: Odd D is Different. *Physical Review X*, **2019**, 9,	9.1	18
36	Separation of chaotic signals by reservoir computing. *Chaos*, **2020**, 30, 023123	3.3	16
35	The myopia of crowds: Cognitive load and collective evaluation of answers on Stack Exchange. *PLoS ONE*, **2017**, 12, e0173610	3.7	15
34	Dynamical instability in Boolean networks as a percolation problem. *Physical Review Letters*, **2012**, 109, 085701	7.4	15
33	Echo phenomena in large systems of coupled oscillators. *Chaos*, **2008**, 18, 037115	3.3	15
32	Complexity reduction ansatz for systems of interacting orientable agents: Beyond the Kuramoto model. *Chaos*, **2019**, 29, 053107	3.3	14
31	Analysis of multiple physical parameters for mechanical phenotyping of living cells. *European Biophysics Journal*, **2013**, 42, 383-94	1.9	14
30	Modeling the dynamics of bivalent histone modifications. *PLoS ONE*, **2013**, 8, e77944	3.7	12
29	Single-cell systems biology: probing the basic unit of information flow. *Current Opinion in Systems Biology*, **2018**, 8, 7-15	3.2	11
28	Stability of Boolean networks: the joint effects of topology and update rules. *Physical Review E*, **2014**, 90, 022814	2.4	11
27	Interpreting patterns of gene expression: signatures of coregulation, the data processing inequality, and triplet motifs. *PLoS ONE*, **2012**, 7, e31969	3.7	11
26	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	3.3	11
25	Finding New Order in Biological Functions from the Network Structure of Gene Annotations. *PLoS Computational Biology*, **2015**, 11, e1004565	5	8
24	Reversibility of granular rotations and translations. *Physical Review E*, **2019**, 100, 042905	2.4	7

23	Spatially embedded growing small-world networks. *Scientific Reports*, **2014**, 4, 7047	4.9	7
22	Implications of functional similarity for gene regulatory interactions. *Journal of the Royal Society Interface*, **2012**, 9, 1625-36	4.1	7
21	Similarity Learning and Generalization with Limited Data: A Reservoir Computing Approach. *Complexity*, **2018**, 2018, 1-15	1.6	7
20	Predictability of User Behavior in Social Media: Bottom-Up v. Top-Down Modeling **2013**,		6
19	Map model for synchronization of systems of many coupled oscillators. *Chaos*, **2010**, 20, 023109	3.3	6
18	Using data assimilation to train a hybrid forecast system that combines machine-learning and knowledge-based components. *Chaos*, **2021**, 31, 053114	3.3	6
17	Consequences of anomalous diffusion in disordered systems under cyclic forcing. *Physical Review Letters*, **2014**, 112, 228001	7.4	5
16	A pathway-centric view of spatial proximity in the 3D nucleome across cell lines. *Scientific Reports*, **2016**, 6, 39279	4.9	5
15	A network function-based definition of communities in complex networks. *Chaos*, **2012**, 22, 033129	3.3	4
14	Topological properties of chromosome conformation graphs reflect spatial proximities within chromatin **2013**,		4
13	Prediction of Elevated Activity in Online Social Media Using Aggregated and Individualized Models. *Lecture Notes in Social Networks*, **2017**, 169-187	0.6	3
12	Forecasting High Tide **2015**,		3
11	Stability of Boolean networks with generalized canalizing rules. *Physical Review E*, **2012**, 85, 046106	2.4	3
10	Impact of imperfect information on network attack. *Physical Review E*, **2015**, 91, 032807	2.4	2
9	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	2.4	2
8	Inferring models of opinion dynamics from aggregated jury data. *PLoS ONE*, **2019**, 14, e0218312	3.7	2
7	Inhibitory neurons promote robust critical firing dynamics in networks of integrate-and-fire neurons. *Physical Review E*, **2016**, 94, 062309	2.4	2
6	Universality Under Conditions of Self-tuning. *Journal of Statistical Physics*, **2010**, 141, 53-59	1.5	1

5	Competing Opinions and Stubbornness: Connecting Models to Data. *SSRN Electronic Journal*,	1	1
4	An integrated model for interdisciplinary graduate education: Computation and mathematics for biological networks. *PLoS ONE*, **2021**, 16, e0257872	3.7	1
3	Parallel Machine Learning for Forecasting the Dynamics of Complex Networks.. *Physical Review Letters*, **2022**, 128, 164101	7.4	0
2	Phase transitions and assortativity in models of gene regulatory networks evolved under different selection processes. *Journal of the Royal Society Interface*, **2021**, 18, 20200790	4.1	
1	Deep-Readout Random Recurrent Neural Networks for Real-World Temporal Data. *SN Computer Science*, **2022**, 3, 1	2	