Andrew Mugler

List of Publications by Year
in descending order

43 papers	1,317 citations	430874 18 h-index	395702 33 g-index
47 all docs	47 docs citations	47 times ranked	1395 citing authors

#	Article	IF	Citations
1	High-speed DNA-based rolling motors powered by RNase H. Nature Nanotechnology, 2016, 11, 184-190.	31.5	178
2	Cellâ€“cell communication enhances the capacity of cell ensembles to sense shallow gradients during morphogenesis. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E679-88.	7.1	126
3	Signal Percolation within a Bacterial Community. Cell Systems, 2018, 7, 137-145.e3.	6.2	77
4	Fundamental Limits to Cellular Sensing. Journal of Statistical Physics, 2016, 162, 1395-1424.	1.2	74
5	Spectral solutions to stochastic models of gene expression with bursts and regulation. Physical Review E, 2009, 80, 041921.	2.1	71
6	Limits to the precision of gradient sensing with spatial communication and temporal integration. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E689-95.	7.1	67
7	Membrane Clustering and the Role of Rebinding in Biochemical Signaling. Biophysical Journal, 2012, 102, 1069-1078.	0.5	61
8	Spatial partitioning improves the reliability of biochemical signaling. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 5927-5932.	7.1	55
9	Optimal Prediction by Cellular Signaling Networks. Physical Review Letters, 2015, 115, 258103.	7.8	53
10	A stochastic spectral analysis of transcriptional regulatory cascades. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 6529-6534.	7.1	52
11	Highly Polyvalent DNA Motors Generate 100+ pN of Force via Autochemophoresis. Nano Letters, 2019, 19, 6977-6986.	9.1	41
12	Growth of bacteria in 3-d colonies. PLoS Computational Biology, 2017, 13, e1005679.	3.2	38
13	Fundamental Limits to Collective Concentration Sensing in Cell Populations. Physical Review Letters, 2017, 118, 078101.	7.8	37
14	Analytic Methods for Modeling Stochastic Regulatory Networks. Methods in Molecular Biology, 2012, 880, 273-322.	0.9	35
15	Circuit topology of self-interacting chains: implications for folding and unfolding dynamics. Physical Chemistry Chemical Physics, 2014, 16, 22537-22544.	2.8	31
16	Cooperative Clustering Digitizes Biochemical Signaling and Enhances its Fidelity. Biophysical Journal, 2016, 110, 1661-1669.	0.5	27
17	Dynamic Sampling and Information Encoding in Biochemical Networks. Biophysical Journal, 2017, 112, 795-804.	0.5	25
18	Temporal precision of regulated gene expression. PLoS Computational Biology, 2018, 14, e1006201.	3.2	25

#	Article	IF	Citations
19	Collective Chemotaxis through Noisy Multicellular Gradient Sensing. Biophysical Journal, 2016, 111, 640-649.	0.5	24
20	Noise Expands the Response Range of the Bacillus subtilis Competence Circuit. PLoS Computational Biology, 2016, 12, e1004793.	3.2	20
21	Emergent versus Individual-Based Multicellular Chemotaxis. Physical Review Letters, 2017, 119, 188101.	7.8	20
22	Sense and Sensitivity: Physical Limits to Multicellular Sensing, Migration, and Drug Response. Molecular Pharmaceutics, 2016, 13, 2224-2232.	4.6	18
23	Information-Optimal Transcriptional Response to Oscillatory Driving. Physical Review Letters, 2010, 105, 058101.	7.8	16
24	Physical constraints on accuracy and persistence during breast cancer cell chemotaxis. PLoS Computational Biology, 2019, 15, e1006961.	3.2	16
25	Communication shapes sensory response in multicellular networks. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10334-10339.	7.1	15
26	Positive feedback can lead to dynamic nanometer-scale clustering on cell membranes. Journal of Chemical Physics, 2014, 141, 205102.	3.0	12
27	Universality of biochemical feedback and its application to immune cells. Physical Review E, 2019, 99, 022422.	2.1	10
28	Temporal precision of molecular events with regulation and feedback. Physical Review E, 2020, 101, 062420.	2.1	10
29	Modeling of cytometry data in logarithmic space: When is a bimodal distribution not bimodal?. Cytometry Part A: the Journal of the International Society for Analytical Cytology, 2018, 93, 611-619.	1.5	8
30	Critical slowing down in biochemical networks with feedback. Physical Review E, 2019, 100, 022415.	2.1	8
31	Cell-to-Cell Information at a Feedback-Induced Bifurcation Point. Physical Review Letters, 2020, 125, 048103.	7.8	8
32	Diffusion vs. direct transport in the precision of morphogen readout. ELife, 2020, 9, .	6.0	8
33	Role of spatial averaging in multicellular gradient sensing. Physical Biology, 2016, 13, 035004.	1.8	7
34	Precision of Flow Sensing by Self-Communicating Cells. Physical Review Letters, 2020, 124, 168101.	7.8	7
35	Signal processing capacity of the cellular sensory machinery regulates the accuracy of chemotaxis under complex cues. IScience, 2021, 24, 103242.	4.1	7
36	Statistical method for revealing form-function relations in biological networks. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 446-451.	7.1	5

#	Article	IF	Citations
37	Statistics of correlated percolation in a bacterial community. PLoS Computational Biology, 2019, 15, e1007508.	3.2	5
38	Intermediate adhesion maximizes migration velocity of multicellular clusters. Physical Review E, 2021, 103, 032410.	2.1	5
39	Precision of Protein Thermometry. Physical Review Letters, 2021, 127, 098102.	7.8	5
40	Multicellular sensing at a feedback-induced critical point. Physical Review E, 2020, 102, 052411.	2.1	3
41	Spiral Wave Propagation in Communities with Spatially Correlated Heterogeneity. Biophysical Journal, 2020, 118, 1721-1732.	0.5	3
42	Temporally regulated cell migration is sensitive to variation in body size. Development (Cambridge), 2021, 148, .	2.5	3
43	Special issue on emergent collective behaviour from groups of cells. Physical Biology, 2018, 15, 060202.	1.8	1