Oleg A Igoshin

List of Publications by Year
in descending order

85	2,628	185998 28	243296 44
papers	citations	h-index	g-index

103	103	103	2489
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Bacillus subtilis Histidine Kinase KinC Activates Biofilm Formation by Controlling Heterogeneity of Single-Cell Responses. MBio, 2022, 13, e0169421.	1.8	9
2	Clinically translatable cytokine delivery platform for eradication of intraperitoneal tumors. Science Advances, 2022, 8, eabm1032.	4.7	35
3	The energy cost and optimal design of networks for biological discrimination. Journal of the Royal Society Interface, 2022, 19, 20210883.	1.5	10
4	Overlaid positive and negative feedback loops shape dynamical properties of PhoPQ two-component system. PLoS Computational Biology, 2021, 17, e1008130.	1.5	12
5	Chaperone-Mediated Stress Sensing in Mycobacterium tuberculosis Enables Fast Activation and Sustained Response. MSystems, 2021, 6, .	1.7	6
6	Theoretical Analysis Reveals the Cost and Benefit of Proofreading in Coronavirus Genome Replication. Journal of Physical Chemistry Letters, 2021, 12, 2691-2698.	2.1	4
7	A synthetic circuit for buffering gene dosage variation between individual mammalian cells. Nature Communications, 2021, 12, 4132.	5.8	9
8	Quantification of Myxococcus xanthus Aggregation and Rippling Behaviors: Deep-Learning Transformation of Phase-Contrast into Fluorescence Microscopy Images. Microorganisms, 2021, 9, 1954.	1.6	0
9	Independent control of mean and noise by convolution of gene expression distributions. Nature Communications, 2021, 12, 6957.	5.8	3
10	Emergent Myxobacterial Behaviors Arise from Reversal Suppression Induced by Kin Contacts. MSystems, 2021, 6, e0072021.	1.7	3
11	Bacteriophage self-counting in the presence of viral replication. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	8
12	Title is missing!. , 2021, 17, e1008130.		0
13	Title is missing!. , 2021, 17, e1008130.		0
14	Title is missing!. , 2021, 17, e1008130.		0
15	Title is missing!. , 2021, 17, e1008130.		0
16	Data-Driven Models Reveal Mutant Cell Behaviors Important for Myxobacterial Aggregation. MSystems, 2020, 5, .	1.7	6
17	Do We Understand the Mechanisms Used by Biological Systems to Correct Their Errors?. Journal of Physical Chemistry B, 2020, 124, 9289-9296.	1.2	9
18	Metabolic stress promotes stop-codon readthrough and phenotypic heterogeneity. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 22167-22172.	3.3	19

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19	Trade-Offs between Speed, Accuracy, and Dissipation in tRNA^{Ile} Aminoacylation. Journal of Physical Chemistry Letters, 2020, 11, 4001-4007.	2.1	8
20	Kinetic control of stationary flux ratios for a wide range of biochemical processes. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 8884-8889.	3.3	5
21	A synthetic system for asymmetric cell division in Escherichia coli. Nature Chemical Biology, 2019, 15, 917-924.	3.9	29
22	Biophysics at the coffee shop: lessons learned working with George Oster. Molecular Biology of the Cell, 2019, 30, 1882-1889.	0.9	4
23	Optogenetic control of Bacillus subtilis gene expression. Nature Communications, 2019, 10, 3099.	5.8	69
24	An Engineered <i>B.Âsubtilis</i> Inducible Promoter System with over 10â€¯000-Fold Dynamic Range. ACS Synthetic Biology, 2019, 8, 1673-1678.	1.9	35
25	Trade-Offs between Error, Speed, Noise, and Energy Dissipation in Biological Processes with Proofreading. Journal of Physical Chemistry B, 2019, 123, 4718-4725.	1.2	33
26	Systematic analysis of the <i>Myxococcus xanthus</i> developmental gene regulatory network supports posttranslational regulation of FruA by Câ€signaling. Molecular Microbiology, 2019, 111, 1732-1752.	1.2	7
27	Dynamics of Bacterial Gene Regulatory Networks. Annual Review of Biophysics, 2018, 47, 447-467.	4.5	20
28	Agent-Based Modeling Reveals Possible Mechanisms for Observed Aggregation CellÂBehaviors. Biophysical Journal, 2018, 115, 2499-2511.	0.2	16
29	Elucidating interplay of speed and accuracy in biological error correction. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5183-5188.	3.3	75
30	Data-driven modeling reveals cell behaviors controlling self-organization during <i>Myxococcus xanthus</i> development. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E4592-E4601.	3.3	35
31	Accuracy of Substrate Selection by Enzymes Is Controlled by Kinetic Discrimination. Journal of Physical Chemistry Letters, 2017, 8, 1552-1556.	2.1	16
32	Heterogeneity of Stop Codon Readthrough in Single Bacterial Cells and Implications for Population Fitness. Molecular Cell, 2017, 67, 826-836.e5.	4.5	40
33	On the mechanism of long-range orientational order of fibroblasts. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8974-8979.	3.3	48
34	Modeling mechanical interactions in growing populations of rod-shaped bacteria. Physical Biology, 2017, 14, 055001.	0.8	31
35	Mechanism of Kin-Discriminatory Demarcation Line Formation between Colonies of Swarming Bacteria. Biophysical Journal, 2017, 113, 2477-2486.	0.2	11
36	Non-monotonic Response to Monotonic Stimulus: Regulation of Glyoxylate Shunt Gene-Expression Dynamics in Mycobacterium tuberculosis. PLoS Computational Biology, 2016, 12, e1004741.	1.5	30

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37	Colony Expansion of Socially Motile Myxococcus xanthus Cells Is Driven by Growth, Motility, and Exopolysaccharide Production. PLoS Computational Biology, 2016, 12, e1005010.	1.5	13
38	Role of Autoregulation and Relative Synthesis of Operon Partners in Alternative Sigma Factor Networks. PLoS Computational Biology, 2016, 12, e1005267.	1.5	8
39	FlowCal: A User-Friendly, Open Source Software Tool for Automatically Converting Flow Cytometry Data from Arbitrary to Calibrated Units. ACS Synthetic Biology, 2016, 5, 774-780.	1.9	108
40	Functional requirements of cellular differentiation: lessons from Bacillus subtilis. Current Opinion in Microbiology, 2016, 34, 38-46.	2.3	23
41	Slowdown of growth controls cellularÂdifferentiation. Molecular Systems Biology, 2016, 12, 871.	3.2	33
42	The <scp>P</scp>sp system of <scp><i>M</i></scp><i>ycobacterium tuberculosis</i> integrates envelope stressâ€sensing and envelopeâ€preserving functions. Molecular Microbiology, 2015, 97, 408-422.	1.2	42
43	How to train your microbe: methods for dynamically characterizing gene networks. Current Opinion in Microbiology, 2015, 24, 113-123.	2.3	27
44	Chromosomal Arrangement of Phosphorelay Genes Couples Sporulation and DNA Replication. Cell, 2015, 162, 328-337.	13.5	79
45	Mechanism for Collective Cell Alignment in Myxococcus xanthus Bacteria. PLoS Computational Biology, 2015, 11, e1004474.	1.5	39
46	Myxococcus xanthus Gliding Motors Are Elastically Coupled to the Substrate as Predicted by the Focal Adhesion Model of Gliding Motility. PLoS Computational Biology, 2014, 10, e1003619.	1.5	45
47	Unraveling the regulatory connections between two controllers of breast cancer cell fate. Nucleic Acids Research, 2014, 42, 6839-6849.	6.5	10
48	Tunable Protease-Activatable Virus Nanonodes. ACS Nano, 2014, 8, 4740-4746.	7.3	44
49	Triggering sporulation in <i><scp>B</scp>acillus subtilis</i> with artificial twoâ€component systems reveals the importance of proper <scp>Spo</scp>0<scp>A</scp> activation dynamics. Molecular Microbiology, 2013, 90, 181-194.	1.2	39
50	Mathematical model of a gene regulatory network reconciles effects of genetic perturbations on hematopoietic stem cell emergence. Developmental Biology, 2013, 379, 258-269.	0.9	21
51	The Mechanistic Basis of Myxococcus xanthus Rippling Behavior and Its Physiological Role during Predation. PLoS Computational Biology, 2012, 8, e1002715.	1.5	40
52	Coupling between feedback loops in autoregulatory networks affects bistability range, open-loop gain and switching times. Physical Biology, 2012, 9, 055003.	0.8	37
53	Ultrasensitivity of the <i>Bacillus subtilis</i> sporulation decision. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E3513-22.	3.3	62
54	Interplay of Gene Expression Noise and Ultrasensitive Dynamics Affects Bacterial Operon Organization. PLoS Computational Biology, 2012, 8, e1002672.	1.5	23

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55	Non-transcriptional regulatory processes shape transcriptional network dynamics. Nature Reviews Microbiology, 2011, 9, 817-828.	13.6	46
56	Bistable responses in bacterial genetic networks: Designs and dynamical consequences. Mathematical Biosciences, 2011, 231, 76-89.	0.9	60
57	Quantifying Aggregation Dynamics during Myxococcus xanthus Development. Journal of Bacteriology, 2011, 193, 5164-5170.	1.0	21
58	Statistical image analysis reveals features affecting fates of Myxococcus xanthus developmental aggregates. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 5915-5920.	3.3	35
59	Thermodynamic models of combinatorial gene regulation by distant enhancers. IET Systems Biology, 2010, 4, 393-408.	0.8	17
60	The interplay of multiple feedback loops with post-translational kinetics results in bistability of mycobacterial stress response. Physical Biology, 2010, 7, 036005.	0.8	57
61	Single-cell measurement of the levels and distributions of the phosphorelay components in a population of sporulating Bacillus subtilis cells. Microbiology (United Kingdom), 2010, 156, 2294-2304.	0.7	31
62	Modeling Reveals Bistability and Low-Pass Filtering in the Network Module Determining Blood Stem Cell Fate. PLoS Computational Biology, 2010, 6, e1000771.	1.5	53
63	Adaptable Functionality of Transcriptional Feedback in Bacterial Two-Component Systems. PLoS Computational Biology, 2010, 6, e1000676.	1.5	53
64	Dynamic Disorder in Quasi-Equilibrium Enzymatic Systems. PLoS ONE, 2010, 5, e12364.	1.1	15
65	Dynamic Disorder-Driven Substrate Inhibition and Bistability in a Simple Enzymatic Reaction. Journal of Physical Chemistry B, 2009, 113, 13421-13428.	1.2	11
66	Hysteretic and graded responses in bacterial two-component signal transduction. Molecular Microbiology, 2008, 68, 1196-1215.	1.2	60
67	Transient heterogeneity in extracellular protease production by <i>Bacillus subtilis</i>. Molecular Systems Biology, 2008, 4, 184.	3.2	181
68	Distinctive Topologies of Partner-switching Signaling Networks Correlate with their Physiological Roles. Journal of Molecular Biology, 2007, 369, 1333-1352.	2.0	44
69	Signalling network with a bistable hysteretic switch controls developmental activation of the ÏƒFtranscription factor inBacillus subtilis. Molecular Microbiology, 2006, 61, 165-184.	1.2	42
70	Waves and aggregation patterns in myxobacteria. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 4256-4261.	3.3	97
71	Developmental waves in myxobacteria: A distinctive pattern formation mechanism. Physical Review E, 2004, 70, 041911.	0.8	17
72	A biochemical oscillator explains several aspects of Myxococcus xanthus behavior during development. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 15760-15765.	3.3	97

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73	Breaking symmetry in myxobacteria. Current Biology, 2004, 14, R459-R462.	1.8	15
74	Rippling of myxobacteria. Mathematical Biosciences, 2004, 188, 221-233.	0.9	14
75	The Motility of Mollicutes. Biophysical Journal, 2003, 85, 828-842.	0.2	34
76	Instantaneous and Permanent Photoionization. Journal of Physical Chemistry A, 2001, 105, 19-28.	1.1	5
77	Pattern formation and traveling waves in myxobacteria: Theory and modeling. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 14913-14918.	3.3	129
78	Differential approach to the memory-function reaction kinetics. Chemical Physics Letters, 2000, 317, 481-489.	1.2	16
79	Quenching of fluorescence by irreversible energy transfer at arbitrary strong pumping light. Journal of Luminescence, 2000, 92, 123-132.	1.5	13
80	The effect of chemical displacement of B species in the reaction A+Bâ†'B. Physica A: Statistical Mechanics and Its Applications, 2000, 275, 99-133.	1.2	14
81	Impurity quenching of fluorescence in intense light. Violation of the Sternâ€"Volmer law. Journal of Chemical Physics, 2000, 112, 10930-10940.	1.2	13
82	Photoconductivity and singlet oxygen generation in illuminated polymer in the air atmosphere. Journal of Chemical Physics, 1999, 111, 2200-2209.	1.2	7
83	A new approach to the derivation of binary non-Markovian kinetic equations. Physica A: Statistical Mechanics and Its Applications, 1999, 268, 567-606.	1.2	40
84	Many-particle treatment of nonuniform reacting systems A+Bâ†'C and A+Bâ†'C+D in liquid solutions. Chemical Physics, 1999, 244, 371-385.	0.9	28
85	Integral, unified and Markovian theories of biexcitonic photoionization. Chemical Physics, 1999, 247, 261-273.	0.9	11