Oleg A Igoshin

List of Publications by Year
in descending order

85 papers	2,628 citations	185998 28 h-index	243296 44 g-index
103 all docs	103 docs citations	103 times ranked	2489 citing authors

#	Article	IF	Citations
1	Transient heterogeneity in extracellular protease production by <i>Bacillus subtilis</i>. Molecular Systems Biology, 2008, 4, 184.	3.2	181
2	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
3	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
4	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
5	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
6	Chromosomal Arrangement of Phosphorelay Genes Couples Sporulation and DNA Replication. Cell, 2015, 162, 328-337.	13.5	79
7	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
8	Optogenetic control of Bacillus subtilis gene expression. Nature Communications, 2019, 10, 3099.	5.8	69
9	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
10	Hysteretic and graded responses in bacterial two-component signal transduction. Molecular Microbiology, 2008, 68, 1196-1215.	1.2	60
11	Bistable responses in bacterial genetic networks: Designs and dynamical consequences. Mathematical Biosciences, 2011, 231, 76-89.	0.9	60
12	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
13	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
14	Adaptable Functionality of Transcriptional Feedback in Bacterial Two-Component Systems. PLoS Computational Biology, 2010, 6, e1000676.	1.5	53
15	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
16	Non-transcriptional regulatory processes shape transcriptional network dynamics. Nature Reviews Microbiology, 2011, 9, 817-828.	13.6	46
17	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
18	Distinctive Topologies of Partner-switching Signaling Networks Correlate with their Physiological Roles. Journal of Molecular Biology, 2007, 369, 1333-1352.	2.0	44

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19	Tunable Protease-Activatable Virus Nanonodes. ACS Nano, 2014, 8, 4740-4746.	7.3	44
20	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
21	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
22	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
23	The Mechanistic Basis of Myxococcus xanthus Rippling Behavior and Its Physiological Role during Predation. PLoS Computational Biology, 2012, 8, e1002715.	1.5	40
24	Heterogeneity of Stop Codon Readthrough in Single Bacterial Cells and Implications for Population Fitness. Molecular Cell, 2017, 67, 826-836.e5.	4.5	40
25	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
26	Mechanism for Collective Cell Alignment in Myxococcus xanthus Bacteria. PLoS Computational Biology, 2015, 11, e1004474.	1.5	39
27	Coupling between feedback loops in autoregulatory networks affects bistability range, open-loop gain and switching times. Physical Biology, 2012, 9, 055003.	0.8	37
28	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
29	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
30	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
31	Clinically translatable cytokine delivery platform for eradication of intraperitoneal tumors. Science Advances, 2022, 8, eabm1032.	4.7	35
32	The Motility of Mollicutes. Biophysical Journal, 2003, 85, 828-842.	0.2	34
33	Slowdown of growth controls cellularÂdifferentiation. Molecular Systems Biology, 2016, 12, 871.	3.2	33
34	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
35	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
36	Modeling mechanical interactions in growing populations of rod-shaped bacteria. Physical Biology, 2017, 14, 055001.	0.8	31

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37	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
38	A synthetic system for asymmetric cell division in Escherichia coli. Nature Chemical Biology, 2019, 15, 917-924.	3.9	29
39	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
40	How to train your microbe: methods for dynamically characterizing gene networks. Current Opinion in Microbiology, 2015, 24, 113-123.	2.3	27
41	Interplay of Gene Expression Noise and Ultrasensitive Dynamics Affects Bacterial Operon Organization. PLoS Computational Biology, 2012, 8, e1002672.	1.5	23
42	Functional requirements of cellular differentiation: lessons from Bacillus subtilis. Current Opinion in Microbiology, 2016, 34, 38-46.	2.3	23
43	Quantifying Aggregation Dynamics during Myxococcus xanthus Development. Journal of Bacteriology, 2011, 193, 5164-5170.	1.0	21
44	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
45	Dynamics of Bacterial Gene Regulatory Networks. Annual Review of Biophysics, 2018, 47, 447-467.	4.5	20
46	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
47	Developmental waves in myxobacteria: A distinctive pattern formation mechanism. Physical Review E, 2004, 70, 041911.	0.8	17
48	Thermodynamic models of combinatorial gene regulation by distant enhancers. IET Systems Biology, 2010, 4, 393-408.	0.8	17
49	Differential approach to the memory-function reaction kinetics. Chemical Physics Letters, 2000, 317, 481-489.	1.2	16
50	Accuracy of Substrate Selection by Enzymes Is Controlled by Kinetic Discrimination. Journal of Physical Chemistry Letters, 2017, 8, 1552-1556.	2.1	16
51	Agent-Based Modeling Reveals Possible Mechanisms for Observed Aggregation CellÂBehaviors. Biophysical Journal, 2018, 115, 2499-2511.	0.2	16
52	Breaking symmetry in myxobacteria. Current Biology, 2004, 14, R459-R462.	1.8	15
53	Dynamic Disorder in Quasi-Equilibrium Enzymatic Systems. PLoS ONE, 2010, 5, e12364.	1.1	15
54	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

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55	Rippling of myxobacteria. Mathematical Biosciences, 2004, 188, 221-233.	0.9	14
56	Quenching of fluorescence by irreversible energy transfer at arbitrary strong pumping light. Journal of Luminescence, 2000, 92, 123-132.	1.5	13
57	Impurity quenching of fluorescence in intense light. Violation of the Sternâ€"Volmer law. Journal of Chemical Physics, 2000, 112, 10930-10940.	1.2	13
58	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
59	Overlaid positive and negative feedback loops shape dynamical properties of PhoPQ two-component system. PLoS Computational Biology, 2021, 17, e1008130.	1.5	12
60	Integral, unified and Markovian theories of biexcitonic photoionization. Chemical Physics, 1999, 247, 261-273.	0.9	11
61	Dynamic Disorder-Driven Substrate Inhibition and Bistability in a Simple Enzymatic Reaction. Journal of Physical Chemistry B, 2009, 113, 13421-13428.	1.2	11
62	Mechanism of Kin-Discriminatory Demarcation Line Formation between Colonies of Swarming Bacteria. Biophysical Journal, 2017, 113, 2477-2486.	0.2	11
63	Unraveling the regulatory connections between two controllers of breast cancer cell fate. Nucleic Acids Research, 2014, 42, 6839-6849.	6.5	10
64	The energy cost and optimal design of networks for biological discrimination. Journal of the Royal Society Interface, 2022, 19, 20210883.	1.5	10
65	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
66	A synthetic circuit for buffering gene dosage variation between individual mammalian cells. Nature Communications, 2021, 12, 4132.	5.8	9
67	Bacillus subtilis Histidine Kinase KinC Activates Biofilm Formation by Controlling Heterogeneity of Single-Cell Responses. MBio, 2022, 13, e0169421.	1.8	9
68	Role of Autoregulation and Relative Synthesis of Operon Partners in Alternative Sigma Factor Networks. PLoS Computational Biology, 2016, 12, e1005267.	1.5	8
69	Trade-Offs between Speed, Accuracy, and Dissipation in tRNA^{Ile} Aminoacylation. Journal of Physical Chemistry Letters, 2020, 11, 4001-4007.	2.1	8
70	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
71	Photoconductivity and singlet oxygen generation in illuminated polymer in the air atmosphere. Journal of Chemical Physics, 1999, 111, 2200-2209.	1.2	7
72	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

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73	Data-Driven Models Reveal Mutant Cell Behaviors Important for Myxobacterial Aggregation. MSystems, 2020, 5, .	1.7	6
74	Chaperone-Mediated Stress Sensing in Mycobacterium tuberculosis Enables Fast Activation and Sustained Response. MSystems, 2021, 6, .	1.7	6
75	Instantaneous and Permanent Photoionization. Journal of Physical Chemistry A, 2001, 105, 19-28.	1.1	5
76	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
77	Biophysics at the coffee shop: lessons learned working with George Oster. Molecular Biology of the Cell, 2019, 30, 1882-1889.	0.9	4
78	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
79	Independent control of mean and noise by convolution of gene expression distributions. Nature Communications, 2021, 12, 6957.	5.8	3
80	Emergent Myxobacterial Behaviors Arise from Reversal Suppression Induced by Kin Contacts. MSystems, 2021, 6, e0072021.	1.7	3
81	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
82	Title is missing!. , 2021, 17, e1008130.		0
83	Title is missing!. , 2021, 17, e1008130.		0
84	Title is missing!. , 2021, 17, e1008130.		0
85	Title is missing!. , 2021, 17, e1008130.		0