Jason A Papin

List of Publications by Year in descending order

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ΙΛΟΟΝ Δ ΡΛΟΙΝ

#	Article	IF	CITATIONS
1	A community-driven global reconstruction of human metabolism. Nature Biotechnology, 2013, 31, 419-425.	17.5	920
2	Applications of genomeâ€scale metabolic reconstructions. Molecular Systems Biology, 2009, 5, 320.	7.2	759
3	Reconstruction of cellular signalling networks and analysis of their properties. Nature Reviews Molecular Cell Biology, 2005, 6, 99-111.	37.0	472
4	Genome-scale microbial in silico models: the constraints-based approach. Trends in Biotechnology, 2003, 21, 162-169.	9.3	365
5	Metabolic pathways in the post-genome era. Trends in Biochemical Sciences, 2003, 28, 250-258.	7.5	347
6	Comparison of network-based pathway analysis methods. Trends in Biotechnology, 2004, 22, 400-405.	9.3	347
7	MEMOTE for standardized genome-scale metabolic model testing. Nature Biotechnology, 2020, 38, 272-276.	17.5	314
8	Genome-Scale Metabolic Network Analysis of the Opportunistic Pathogen <i>Pseudomonas aeruginosa</i> PAO1. Journal of Bacteriology, 2008, 190, 2790-2803.	2.2	283
9	Functional integration of a metabolic network model and expression data without arbitrary thresholding. Bioinformatics, 2011, 27, 541-547.	4.1	266
10	Metabolic network reconstruction of <i>Chlamydomonas</i> offers insight into lightâ€driven algal metabolism. Molecular Systems Biology, 2011, 7, 518.	7.2	264
11	Genome-Scale Reconstruction and Analysis of the Pseudomonas putida KT2440 Metabolic Network Facilitates Applications in Biotechnology. PLoS Computational Biology, 2008, 4, e1000210.	3.2	237
12	Integration of expression data in genome-scale metabolic network reconstructions. Frontiers in Physiology, 2012, 3, 299.	2.8	235
13	Flux balance analysis in the era of metabolomics. Briefings in Bioinformatics, 2006, 7, 140-150.	6.5	227
14	Hierarchical thinking in network biology: the unbiased modularization of biochemical networks. Trends in Biochemical Sciences, 2004, 29, 641-647.	7.5	189
15	Multiscale Computational Models of Complex Biological Systems. Annual Review of Biomedical Engineering, 2013, 15, 137-154.	12.3	186
16	Dynamic Analysis of Integrated Signaling, Metabolic, and Regulatory Networks. PLoS Computational Biology, 2008, 4, e1000086.	3.2	182
17	Reconciled rat and human metabolic networks for comparative toxicogenomics and biomarker predictions. Nature Communications, 2017, 8, 14250.	12.8	151
18	Systems analysis of metabolism in the pathogenic trypanosomatid <i>Leishmania major</i> . Molecular Systems Biology, 2008, 4, 177.	7.2	145

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19	Simple: A Sequential Immunoperoxidase Labeling and Erasing Method. Journal of Histochemistry and Cytochemistry, 2009, 57, 899-905.	2.5	135
20	Metabolic Network Analysis of <i>Pseudomonas aeruginosa</i> during Chronic Cystic Fibrosis Lung Infection. Journal of Bacteriology, 2010, 192, 5534-5548.	2.2	133
21	Extreme Pathway Lengths and Reaction Participation in Genome-Scale Metabolic Networks. Genome Research, 2002, 12, 1889-1900.	5.5	125
22	The JAK-STAT Signaling Network in the Human B-Cell: An Extreme Signaling Pathway Analysis. Biophysical Journal, 2004, 87, 37-46.	0.5	117
23	The application of flux balance analysis in systems biology. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2010, 2, 372-382.	6.6	116
24	Reconstruction of the metabolic network of Pseudomonas aeruginosa to interrogate virulence factor synthesis. Nature Communications, 2017, 8, 14631.	12.8	116
25	The Genome-Scale Metabolic Extreme Pathway Structure in Haemophilus influenzae Shows Significant Network Redundancy. Journal of Theoretical Biology, 2002, 215, 67-82.	1.7	115
26	Reconciliation of Genome-Scale Metabolic Reconstructions for Comparative Systems Analysis. PLoS Computational Biology, 2011, 7, e1001116.	3.2	111
27	Determination of Redundancy and Systems Properties of the Metabolic Network of Helicobacter pylori Using Genome-Scale Extreme Pathway Analysis. Genome Research, 2002, 12, 760-769.	5.5	106
28	Inference of Network Dynamics and Metabolic Interactions in the Gut Microbiome. PLoS Computational Biology, 2015, 11, e1004338.	3.2	106
29	TIGER: Toolbox for integrating genome-scale metabolic models, expression data, and transcriptional regulatory networks. BMC Systems Biology, 2011, 5, 147.	3.0	104
30	Topological analysis of mass-balanced signaling networks: a framework to obtain network properties including crosstalk. Journal of Theoretical Biology, 2004, 227, 283-297.	1.7	97
31	Metabolic network modeling ofÂmicrobial communities. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2015, 7, 317-334.	6.6	95
32	Characterizing emergent properties of immunological systems with multi-cellular rule-based computational modeling. Trends in Immunology, 2008, 29, 589-599.	6.8	94
33	A metabolic network approach for the identification and prioritization of antimicrobial drug targets. Trends in Microbiology, 2012, 20, 113-123.	7.7	94
34	Metabolic reconstruction, constraint-based analysis and game theory to probe genome-scale metabolic networks. Current Opinion in Biotechnology, 2010, 21, 502-510.	6.6	91
35	History of antibiotic adaptation influences microbial evolutionary dynamics during subsequent treatment. PLoS Biology, 2017, 15, e2001586.	5.6	90
36	Predicting biological system objectives de novo from internal state measurements. BMC Bioinformatics, 2008, 9, 43.	2.6	89

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37	Inferring Metabolic Mechanisms of Interaction within a Defined Gut Microbiota. Cell Systems, 2018, 7, 245-257.e7.	6.2	89
38	Matrix Formalism to Describe Functional States of Transcriptional Regulatory Systems. PLoS Computational Biology, 2006, 2, e101.	3.2	84
39	Metabolic network analysis integrated with transcript verification for sequenced genomes. Nature Methods, 2009, 6, 589-592.	19.0	83
40	Protein- and zinc-deficient diets modulate the murine microbiome and metabolic phenotype. American Journal of Clinical Nutrition, 2016, 104, 1253-1262.	4.7	83
41	Analysis of Metabolic Capabilities Using Singular Value Decomposition of Extreme Pathway Matrices. Biophysical Journal, 2003, 84, 794-804.	0.5	73
42	Do genomeâ€scale models need exact solvers or clearer standards?. Molecular Systems Biology, 2015, 11, 831.	7.2	68
43	Cross-modulation of pathogen-specific pathways enhances malnutrition during enteric co-infection with Giardia lamblia and enteroaggregative Escherichia coli. PLoS Pathogens, 2017, 13, e1006471.	4.7	68
44	Flux Balance Analysis: Interrogating Genome-Scale Metabolic Networks. Methods in Molecular Biology, 2009, 500, 61-80.	0.9	68
45	Matrix Rigidity Regulates Cancer Cell Growth by Modulating Cellular Metabolism and Protein Synthesis. PLoS ONE, 2012, 7, e37231.	2.5	65
46	Network-based analysis of metabolic regulation in the human red blood cell. Journal of Theoretical Biology, 2003, 225, 185-194.	1.7	64
47	Clinical, Molecular and Genetic Validation of a Murine Orthotopic Xenograft Model of Pancreatic Adenocarcinoma Using Fresh Human Specimens. PLoS ONE, 2013, 8, e77065.	2.5	62
48	Systems-level metabolism of the altered Schaedler flora, a complete gut microbiota. ISME Journal, 2017, 11, 426-438.	9.8	60
49	Novel Multiscale Modeling Tool Applied to Pseudomonas aeruginosa Biofilm Formation. PLoS ONE, 2013, 8, e78011.	2.5	58
50	Integrated Experimental and Computational Analyses Reveal Differential Metabolic Functionality in Antibiotic-Resistant Pseudomonas aeruginosa. Cell Systems, 2019, 8, 3-14.e3.	6.2	56
51	Transcriptome-guided parsimonious flux analysis improves predictions with metabolic networks in complex environments. PLoS Computational Biology, 2020, 16, e1007099.	3.2	55
52	Managing uncertainty in metabolic network structure and improving predictions using EnsembleFBA. PLoS Computational Biology, 2017, 13, e1005413.	3.2	55
53	Development of network-based pathway definitions: the need to analyze real metabolic networks. Trends in Biotechnology, 2003, 21, 195-198.	9.3	51
54	Mechanistic systems modeling to guide drug discovery and development. Drug Discovery Today, 2013, 18, 116-127.	6.4	47

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55	Guiding the Refinement of Biochemical Knowledgebases with Ensembles of Metabolic Networks and Machine Learning. Cell Systems, 2020, 10, 109-119.e3.	6.2	46
56	Ten simple rules for biologists learning to program. PLoS Computational Biology, 2018, 14, e1005871.	3.2	45
57	Comparative Metabolic Systems Analysis of Pathogenic Burkholderia. Journal of Bacteriology, 2014, 196, 210-226.	2.2	43
58	Proteomic and network analysis characterize stage-specific metabolism in Trypanosoma cruzi. BMC Systems Biology, 2009, 3, 52.	3.0	42
59	Metabolic network analysis predicts efficacy of FDA-approved drugs targeting the causative agent of a neglected tropical disease. BMC Systems Biology, 2012, 6, 27.	3.0	41
60	Core Competencies for Undergraduates in Bioengineering and Biomedical Engineering: Findings, Consequences, and Recommendations. Annals of Biomedical Engineering, 2020, 48, 905-912.	2.5	37
61	Community standards to facilitate development and address challenges in metabolic modeling. Molecular Systems Biology, 2020, 16, e9235.	7.2	37
62	Novel Plasmodium falciparum metabolic network reconstruction identifies shifts associated with clinical antimalarial resistance. BMC Genomics, 2017, 18, 543.	2.8	36
63	Functional States of the Genome-Scale Escherichia Coli Transcriptional Regulatory System. PLoS Computational Biology, 2009, 5, e1000403.	3.2	34
64	Whole-Genome Metabolic Network Reconstruction and Constraint-Based Modeling⋆. Methods in Enzymology, 2011, 500, 411-433.	1.0	33
65	<i>Megasphaera</i> in the Stool Microbiota Is Negatively Associated With Diarrheal Cryptosporidiosis. Clinical Infectious Diseases, 2021, 73, e1242-e1251.	5.8	33
66	Comprehensive analysis of receptor tyrosine kinase activation in human melanomas reveals autocrine signaling through IGF-1R. Melanoma Research, 2011, 21, 274-284.	1.2	32
67	Mechanistic identification of biofluid metabolite changes as markers of acetaminophen-induced liver toxicity in rats. Toxicology and Applied Pharmacology, 2019, 372, 19-32.	2.8	32
68	<i>In Vivo</i> Physiological and Transcriptional Profiling Reveals Host Responses to Clostridium difficile Toxin A and Toxin B. Infection and Immunity, 2013, 81, 3814-3824.	2.2	31
69	A Thirteen-Gene Expression Signature Predicts Survival of Patients with Pancreatic Cancer and Identifies New Genes of Interest. PLoS ONE, 2014, 9, e105631.	2.5	31
70	Genotypic and phenotypic analyses of a Pseudomonas aeruginosa chronic bronchiectasis isolate reveal differences from cystic fibrosis and laboratory strains. BMC Genomics, 2015, 16, 883.	2.8	30
71	Biomedical applications of genome-scale metabolic network reconstructions of human pathogens. Current Opinion in Biotechnology, 2018, 51, 70-79.	6.6	30
72	Bioinformatics and cellular signaling. Current Opinion in Biotechnology, 2004, 15, 78-81.	6.6	29

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73	Systems analyses characterize integrated functions of biochemical networks. Trends in Biochemical Sciences, 2006, 31, 284-291.	7.5	28
74	Metabolic systems analysis to advance algal biotechnology. Biotechnology Journal, 2010, 5, 660-670.	3.5	28
75	Multiscale computational analysis of Xenopus laevis morphogenesis reveals key insights of systems-level behavior. BMC Systems Biology, 2007, 1, 46.	3.0	27
76	MetDraw: automated visualization of genome-scale metabolic network reconstructions and high-throughput data. Bioinformatics, 2014, 30, 1327-1328.	4.1	26
77	MicroRNAs induced in melanoma treated with combination targeted therapy of Temsirolimus and Bevacizumab. Journal of Translational Medicine, 2013, 11, 218.	4.4	22
78	An engineering design approach to systems biology. Integrative Biology (United Kingdom), 2017, 9, 574-583.	1.3	22
79	Improving reproducibility in computational biology research. PLoS Computational Biology, 2020, 16, e1007881.	3.2	22
80	<i>In Vivo</i> Gene Essentiality and Metabolism in Bordetella pertussis. MSphere, 2019, 4, .	2.9	21
81	A simplified metabolic network reconstruction to promote understanding and development of flux balance analysis tools. Computers in Biology and Medicine, 2019, 105, 64-71.	7.0	21
82	Minimum bactericidal concentration of ciprofloxacin to Pseudomonas aeruginosa determined rapidly based on pyocyanin secretion. Sensors and Actuators B: Chemical, 2020, 312, 127936.	7.8	20
83	Reconciling high-throughput gene essentiality data with metabolic network reconstructions. PLoS Computational Biology, 2019, 15, e1006507.	3.2	19
84	Novel co-culture plate enables growth dynamic-based assessment of contact-independent microbial interactions. PLoS ONE, 2017, 12, e0182163.	2.5	19
85	Miniaturized Plate Readers for Low-Cost, High-Throughput Phenotypic Screening. Journal of the Association for Laboratory Automation, 2015, 20, 51-55.	2.8	18
86	Evaluating the efficacy of an algae-based treatment to mitigate elicitation of antibiotic resistance. Chemosphere, 2019, 237, 124421.	8.2	18
87	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. PLoS Computational Biology, 2020, 16, e1007847.	3.2	18
88	Mechanistic models of microbial community metabolism. Molecular Omics, 2021, 17, 365-375.	2.8	18
89	Genome-wide functional annotation and structural verification of metabolic ORFeome of Chlamydomonas reinhardtii. BMC Genomics, 2011, 12, S4.	2.8	17
90	Systems analysis of the transcriptional response of human ileocecal epithelial cells to Clostridium difficile toxins and effects on cell cycle control. BMC Systems Biology, 2012, 6, 2.	3.0	17

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91	Increased Urinary Trimethylamine N-Oxide Following Cryptosporidium Infection and Protein Malnutrition Independent of Microbiome Effects. Journal of Infectious Diseases, 2017, 216, 64-71.	4.0	16
92	Genome-Scale Characterization of Toxicity-Induced Metabolic Alterations in Primary Hepatocytes. Toxicological Sciences, 2019, 172, 279-291.	3.1	15
93	Identifying functional metabolic shifts in heart failure with the integration of omics data and a heart-specific, genome-scale model. Cell Reports, 2021, 34, 108836.	6.4	15
94	Growth-altering microbial interactions are responsive to chemical context. PLoS ONE, 2017, 12, e0164919.	2.5	15
95	Dephosphorylation of \hat{l}^2 -Arrestin 1 in Clioblastomas. Journal of Neuropathology and Experimental Neurology, 2009, 68, 535-541.	1.7	13
96	Novel Drivers of Virulence in Clostridioides difficile Identified via Context-Specific Metabolic Network Analysis. MSystems, 2021, 6, e0091921.	3.8	13
97	High temporal resolution of glucosyltransferase dependent and independent effects of Clostridium difficile toxins across multiple cell types. BMC Microbiology, 2015, 15, 7.	3.3	12
98	Systems level analysis of the Chlamydomonas reinhardtii metabolic network reveals variability in evolutionary co-conservation. Molecular BioSystems, 2016, 12, 2394-2407.	2.9	12
99	Collaborating with our community to increase code sharing. PLoS Computational Biology, 2021, 17, e1008867.	3.2	12
100	An updated genome-scale metabolic network reconstruction of Pseudomonas aeruginosa PA14 to characterize mucin-driven shifts in bacterial metabolism. Npj Systems Biology and Applications, 2021, 7, 37.	3.0	12
101	Mechanistic Exploration of Phthalimide Neovascular Factor 1 Using Network Analysis Tools. Tissue Engineering, 2007, 13, 2561-2575.	4.6	11
102	Influential Parameters for the Analysis of Intracellular Parasite Metabolomics. MSphere, 2018, 3, .	2.9	11
103	Harnessing Systems Biology Approaches to Engineer Functional Microvascular Networks. Tissue Engineering - Part B: Reviews, 2010, 16, 361-370.	4.8	10
104	Systems Analysis of Small Signaling Modules Relevant to Eight Human Diseases. Annals of Biomedical Engineering, 2011, 39, 621-635.	2.5	10
105	Predicting changes in renal metabolism after compound exposure with a genome-scale metabolic model. Toxicology and Applied Pharmacology, 2021, 412, 115390.	2.8	10
106	Untargeted Metabolomics Reveals Species-Specific Metabolite Production and Shared Nutrient Consumption by Pseudomonas aeruginosa and Staphylococcus aureus. MSystems, 2021, 6, e0048021.	3.8	9
107	Novel pathway compendium analysis elucidates mechanism of pro-angiogenic synthetic small molecule. Bioinformatics, 2008, 24, 2384-2390.	4.1	8
108	Nano-motion Dynamics are Determined by Surface-Tethered Selectin Mechanokinetics and Bond Formation. PLoS Computational Biology, 2009, 5, e1000612.	3.2	8

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109	Linking Genome-Scale Metabolic Modeling and Genome Annotation. Methods in Molecular Biology, 2013, 985, 61-83.	0.9	8
110	Metabolic network-guided binning of metagenomic sequence fragments. Bioinformatics, 2016, 32, 867-874.	4.1	8
111	Computational Models of Algae Metabolism for Industrial Applications. Industrial Biotechnology, 2013, 9, 185-195.	0.8	7
112	Multiscale Computational Modeling in Vascular Biology: From Molecular Mechanisms to Tissue-Level Structure and Function. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2013, , 209-240.	1.0	7
113	Phthalimide neovascular factor 1 (PNF1) modulates MT1â€MMP activity in human microvascular endothelial cells. Biotechnology and Bioengineering, 2009, 103, 796-807.	3.3	6
114	Leveraging the effects of chloroquine on resistant malaria parasites for combination therapies. BMC Bioinformatics, 2019, 20, 186.	2.6	6
115	Fecal sphingolipids predict parenteral nutrition–associated cholestasis in the neonatal intensive care unit. Journal of Parenteral and Enteral Nutrition, 2022, 46, 1903-1913.	2.6	6
116	Advancing code sharing in the computational biology community. PLoS Computational Biology, 2022, 18, e1010193.	3.2	6
117	Genome-Scale Model-Based Identification of Metabolite Indicators for Early Detection of Kidney Toxicity. Toxicological Sciences, 2020, 173, 293-312.	3.1	5
118	Systems biology approaches help to facilitate interpretation of cross-species comparisons. Current Opinion in Toxicology, 2020, 23-24, 74-79.	5.0	5
119	From "What Is?―to "What Isn't?―Computational Biology. PLoS Computational Biology, 2015, 11, e1004318.	3.2	5
120	Determination of Redundancy and Systems Properties of the Metabolic Network of Helicobacter pylori Using Genome-Scale Extreme Pathway Analysis. Genome Research, 2002, 12, 760-769.	5.5	5
121	Comparative analyses of parasites with a comprehensive database of genome-scale metabolic models. PLoS Computational Biology, 2022, 18, e1009870.	3.2	5
122	Gramâ€negative Microbiota Blooms in Premature Twins Discordant for Parenteral Nutritionâ€associated Cholestasis. Journal of Pediatric Gastroenterology and Nutrition, 2020, 70, 640-644.	1.8	4
123	Metabolic Network Reconstructions to Predict Drug Targets and Off-Target Effects. Methods in Molecular Biology, 2020, 2088, 315-330.	0.9	4
124	One thousand simple rules. PLoS Computational Biology, 2018, 14, e1006670.	3.2	3
125	Multidimensional Clinical Surveillance of Pseudomonas aeruginosa Reveals Complex Relationships between Isolate Source, Morphology, and Antimicrobial Resistance. MSphere, 2021, 6, e0039321.	2.9	3
126	Quantifying cumulative phenotypic and genomic evidence for procedural generation of metabolic network reconstructions. PLoS Computational Biology, 2022, 18, e1009341.	3.2	3

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127	Wisdom of crowds in computational biology. PLoS Computational Biology, 2019, 15, e1007032.	3.2	2
128	Clostridioides difficile: Sometimes It Pays To Be Difficult. Cell Host and Microbe, 2020, 28, 358-359.	11.0	1
129	Conserved Virulence-Linked Metabolic Reprogramming in <i>Clostridioides Difficile</i> Identified Through Genome-Scale Metabolic Network Analysis. SSRN Electronic Journal, 0, , .	0.4	1
130	Application of a novel optimization-based approach to characterize integrated signalling, regulatory, and metabolic biochemical networks. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 11630-11635.	0.4	0
131	A scalable systems analysis approach for regulated metabolic networks. , 2009, 2009, 5464-5.		Ο
132	Computing Biology. PLoS Computational Biology, 2016, 12, e1005050.	3.2	0
133	Computational approaches to understanding Clostridioides difficile metabolism and virulence. Current Opinion in Microbiology, 2022, 65, 108-115.	5.1	0
134	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. , 2020, 16, e1007847.		0
135	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. , 2020, 16, e1007847.		0
136	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. , 2020, 16, e1007847.		0
137	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. , 2020, 16, e1007847.		0
138	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. , 2020, 16, e1007847.		0
139	Medusa: Software to build and analyze ensembles of genome-scale metabolic network reconstructions. , 2020, 16, e1007847.		0