Iain G Johnston

List of Publications by Year
in descending order

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		159358	155451
68	3,670	30	55
papers	citations	h-index	g-index

92	92	92	6903
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The State of Vaccine Confidence 2016: Global Insights Through a 67-Country Survey. EBioMedicine, 2016, 12, 295-301.	2.7	785
2	The Essential Genome of Escherichia coli K-12. MBio, 2018, 9, .	1.8	242
3	Evolutionary Inference across Eukaryotes Identifies Specific Pressures Favoring Mitochondrial Gene Retention. Cell Systems, 2016, 2, 101-111.	2.9	131
4	What is the function of mitochondrial networks? A theoretical assessment of hypotheses and proposal for future research. BioEssays, 2015, 37, 687-700.	1.2	122
5	Phenotypic landscape inference reveals multiple evolutionary paths to C4 photosynthesis. ELife, 2013, 2, e00961.	2.8	112
6	The â€˜mitoflashâ€™ probe cpYFP does not respond to superoxide. Nature, 2014, 514, E12-E14.	13.7	109
7	Pulsing of Membrane Potential in Individual Mitochondria: A Stress-Induced Mechanism to Regulate Respiratory Bioenergetics in Arabidopsis. Plant Cell, 2012, 24, 1188-1201.	3.1	107
8	Mitochondrial Variability as a Source of Extrinsic Cellular Noise. PLoS Computational Biology, 2012, 8, e1002416.	1.5	104
9	mtDNA Segregation in Heteroplasmic Tissues Is Common InÂVivo and Modulated by Haplotype Differences and Developmental Stage. Cell Reports, 2014, 7, 2031-2041.	2.9	99
10	FRIENDLY Regulates Mitochondrial Distribution, Fusion, and Quality Control in Arabidopsis. Plant Physiology, 2014, 166, 808-828.	2.3	93
11	Mitochondrial Heterogeneity. Frontiers in Genetics, 2018, 9, 718.	1.1	89
12	Stochastic modelling, Bayesian inference, and new in vivo measurements elucidate the debated mtDNA bottleneck mechanism. ELife, 2015, 4, e07464.	2.8	83
13	Temperature variability is integrated by a spatially embedded decision-making center to break dormancy in Arabidopsis seeds. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6629-6634.	3.3	81
14	Global Topological Order Emerges through Local Mechanical Control of Cell Divisions in the Arabidopsis Shoot Apical Meristem. Cell Systems, 2019, 8, 53-65.e3.	2.9	74
15	Modelling the self-assembly of virus capsids. Journal of Physics Condensed Matter, 2010, 22, 104101.	0.7	71
16	Forecasted trends in vaccination coverage and correlations with socioeconomic factors: a global time-series analysis over 30 years. The Lancet Global Health, 2016, 4, e726-e735.	2.9	69
17	Regulation of Mother-to-Offspring Transmission of mtDNA Heteroplasmy. Cell Metabolism, 2019, 30, 1120-1130.e5.	7.2	66
18	Tension and Resolution: Dynamic, Evolving Populations of Organelle Genomes within Plant Cells. Molecular Plant, 2019, 12, 764-783.	3.9	65

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19	A tractable genotypeâ€“phenotype map modelling the self-assembly of protein quaternary structure. Journal of the Royal Society Interface, 2014, 11, 20140249.	1.5	62
20	Mitochondrial DNA disease and developmental implications for reproductive strategies. Molecular Human Reproduction, 2015, 21, 11-22.	1.3	59
21	Large-scale genetic analysis reveals mammalian mtDNA heteroplasmy dynamics and variance increase through lifetimes and generations. Nature Communications, 2018, 9, 2488.	5.8	51
22	Symmetry and simplicity spontaneously emerge from the algorithmic nature of evolution. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2113883119.	3.3	50
23	A novel quantitative assay of mitophagy: Combining high content fluorescence microscopy and mitochondrial DNA load to quantify mitophagy and identify novel pharmacological tools against pathogenic heteroplasmic mtDNA. Pharmacological Research, 2015, 100, 24-35.	3.1	47
24	Avoiding organelle mutational meltdown across eukaryotes with or without a germline bottleneck. PLoS Biology, 2021, 19, e3001153.	2.6	47
25	Self-assembly, modularity, and physical complexity. Physical Review E, 2010, 82, 026117.	0.8	46
26	Mitochondrial Network State Scales mtDNA Genetic Dynamics. Genetics, 2019, 212, 1429-1443.	1.2	46
27	What is quantitative plant biology?. Quantitative Plant Biology, 2021, 2, .	0.8	43
28	Evolutionary dynamics in a simple model of self-assembly. Physical Review E, 2011, 83, 066105.	0.8	42
29	Closed-form stochastic solutions for non-equilibrium dynamics and inheritance of cellular components over many cell divisions. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150050.	1.0	39
30	Evolution of Cell-to-Cell Variability in Stochastic, Controlled, Heteroplasmic mtDNA Populations. American Journal of Human Genetics, 2016, 99, 1150-1162.	2.6	37
31	The self-assembly of DNA Holliday junctions studied with a minimal model. Journal of Chemical Physics, 2009, 130, 065101.	1.2	36
32	Epistasis can lead to fragmented neutral spaces and contingency in evolution. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 1777-1783.	1.2	36
33	Variability in seeds: biological, ecological, and agricultural implications. Journal of Experimental Botany, 2017, 68, erw397.	2.4	33
34	Network analysis of Arabidopsis mitochondrial dynamics reveals a resolved tradeoff between physical distribution and social connectivity. Cell Systems, 2021, 12, 419-431.e4.	2.9	33
35	The effect of scale-free topology on the robustness and evolvability of genetic regulatory networks. Journal of Theoretical Biology, 2010, 267, 48-61.	0.8	32
36	Cell identity and nucleo-mitochondrial genetic context modulate OXPHOS performance and determine somatic heteroplasmy dynamics. Science Advances, 2020, 6, eaba5345.	4.7	31

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37	Toward Precision Healthcare: Context and Mathematical Challenges. Frontiers in Physiology, 2017, 8, 136.	1.3	28
38	mtDNA diversity in human populations highlights the merit of haplotype matching in gene therapies. Molecular Human Reproduction, 2016, 22, 809-817.	1.3	24
39	Evolving mtDNA populations within cells. Biochemical Society Transactions, 2019, 47, 1367-1382.	1.6	24
40	Identification of a bet-hedging network motif generating noise in hormone concentrations and germination propensity in Arabidopsis. Journal of the Royal Society Interface, 2018, 15, 20180042.	1.5	22
41	The Chaos Within. Significance, 2012, 9, 17-21.	0.3	20
42	Energetic costs of cellular and therapeutic control of stochastic mitochondrial DNA populations. PLoS Computational Biology, 2019, 15, e1007023.	1.5	20
43	Explicit Tracking of Uncertainty Increases the Power of Quantitative Rule-of-Thumb Reasoning in Cell Biology. Biophysical Journal, 2014, 107, 2612-2617.	0.2	19
44	Modulating mitochondrial quality in disease transmission: towards enabling mitochondrial DNA disease carriers to have healthy children. Biochemical Society Transactions, 2016, 44, 1091-1100.	1.6	19
45	Varied Mechanisms and Models for the Varying Mitochondrial Bottleneck. Frontiers in Cell and Developmental Biology, 2019, 7, 294.	1.8	19
46	Mitochondrial heterogeneity, metabolic scaling and cell death. BioEssays, 2017, 39, 1700001.	1.2	18
47	HyperTraPS: Inferring Probabilistic Patterns of Trait Acquisition in Evolutionary and Disease Progression Pathways. Cell Systems, 2020, 10, 39-51.e10.	2.9	14
48	Mitochondrial DNA density homeostasis accounts for a threshold effect in a cybrid model of a human mitochondrial disease. Biochemical Journal, 2017, 474, 4019-4034.	1.7	13
49	Efficient parametric inference for stochastic biological systems with measured variability. Statistical Applications in Genetics and Molecular Biology, 2014, 13, 379-90.	0.2	12
50	Efficient vasculature investment in tissues can be determined without global information. Journal of the Royal Society Interface, 2020, 17, 20200137.	1.5	12
51	2-Deoxy-D-glucose couples mitochondrial DNA replication with mitochondrial fitness and promotes the selection of wild-type over mutant mitochondrial DNA. Nature Communications, 2021, 12, 6997.	5.8	12
52	Altered collective mitochondrial dynamics in the Arabidopsismsh1mutant compromising organelle DNA maintenance. Journal of Experimental Botany, 2022, 73, 5428-5439.	2.4	11
53	Monitoring Intracellular Oxygen Concentration: Implications for Hypoxia Studies and Real-Time Oxygen Monitoring. Advances in Experimental Medicine and Biology, 2016, 876, 257-263.	0.8	8
54	Intracellular Energy Variability Modulates Cellular Decision-Making Capacity. Scientific Reports, 2019, 9, 20196.	1.6	8

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55	MtDNA sequence features associated with â€˜selfish genomesâ€™ predict tissue-specific segregation and reversion. Nucleic Acids Research, 2020, 48, 8290-8301.	6.5	8
56	Understanding learner behaviour in online courses with Bayesian modelling and time series characterisation. Scientific Reports, 2021, 11, 2823.	1.6	8
57	Stochastic Models for Evolving Cellular Populations of Mitochondria: Disease, Development, and Ageing. , 2017, , 287-314.		7
58	Precision identification of high-risk phenotypes and progression pathways in severe malaria without requiring longitudinal data. Npj Digital Medicine, 2019, 2, 63.	5.7	7
59	Model selection and parameter estimation for root architecture models using likelihood-free inference. Journal of the Royal Society Interface, 2019, 16, 20190293.	1.5	7
60	Dynamic Boolean modelling reveals the influence of energy supply on bacterial efflux pump expression. Journal of the Royal Society Interface, 2022, 19, 20210771.	1.5	7
61	Data-Driven Inference Reveals Distinct and Conserved Dynamic Pathways of Tool Use Emergence across Animal Taxa. IScience, 2020, 23, 101245.	1.9	5
62	Changing socioeconomic determinants of childhood vaccines: a global analysis over three decades. The Lancet Global Health, 2015, 3, S20.	2.9	4
63	Multiple hypothesis correction is vital and undermines reported mtDNA links to diseases including AIDS, cancer, and Huntingdonâ€™s. Mitochondrial DNA Part A: DNA Mapping, Sequencing, and Analysis, 2016, 27, 3423-3427.	0.7	3
64	Sexually antagonistic evolution of mitochondrial and nuclear linkage. Journal of Evolutionary Biology, 2021, 34, 757-766.	0.8	3
65	Reply to Ocklenburg and Mundorf: The interplay of developmental bias and natural selection. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	3
66	Endless Love: On the Termination of a Playground Number Game. Recreational Mathematics Magazine, 2016, 3, 61-78.	0.2	1
67	S100A4 mRNA-protein relationship uncovered by measurement noise reduction. Journal of Molecular Medicine, 2020, 98, 735-749.	1.7	0
68	Optimal strategies in the fighting fantasy gaming system: Influencing stochastic dynamics by gambling with limited resource. European Journal of Operational Research, 2022, 302, 1272-1281.	3.5	0