Sara Imari Walker

List of Publications by Year
in descending order

63 papers	2,094 citations	257429 24 h-index	265191 42 g-index
80 all docs	80 docs citations	80 times ranked	1747 citing authors

#	Article	IF	Citations
1	Intelligence as a planetary scale process. International Journal of Astrobiology, 2022, 21, 47-61.	1.6	19
2	Scaling laws in enzyme function reveal a new kind of biochemical universality. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	14
3	Formalising the Pathways to Life Using Assembly Spaces. Entropy, 2022, 24, 884.	2.2	9
4	Fifty years of â€˜More is differentâ€™. Nature Reviews Physics, 2022, 4, 508-510.	26.6	15
5	Inferring Exoplanet Disequilibria with Multivariate Information in Atmospheric Reaction Networks. Astronomical Journal, 2022, 164, 53.	4.7	1
6	Seeding Biochemistry on Other Worlds: Enceladus as a Case Study. Astrobiology, 2021, 21, 177-190.	3.0	10
7	Informational architecture across non-living and living collectives. Theory in Biosciences, 2021, 140, 325-341.	1.4	4
8	Scarcity of scale-free topology is universal across biochemical networks. Scientific Reports, 2021, 11, 6542.	3.3	8
9	Identifying molecules as biosignatures with assembly theory and mass spectrometry. Nature Communications, 2021, 12, 3033.	12.8	66
10	Formalizing falsification for theories of consciousness across computational hierarchies. Neuroscience of Consciousness, 2021, 2021, niab014.	2.6	5
11	Quorum sensing without deliberation: biological inspiration for externalizing computation to physical spaces in multi-robot systems. Swarm Intelligence, 2021, 15, 171-203.	2.2	5
12	NaÃ¯ve individuals promote collective exploration in homing pigeons. ELife, 2021, 10, .	6.0	8
13	A Flexible Bayesian Framework for Assessing Habitability with Joint Observational and Model Constraints. Astronomical Journal, 2020, 159, 55.	4.7	9
14	Division of labour promotes the spread of information in colony emigrations by the ant Temnothorax rugatulus. Proceedings of the Royal Society B: Biological Sciences, 2020, 287, 20192950.	2.6	14
15	Detectability of Life Using Oxygen on Pelagic Planets and Water Worlds. Astrophysical Journal, 2020, 893, 163.	4.5	22
16	Revealing the structure of information flows discriminates similar animal social behaviors. ELife, 2020, 9, .	6.0	11
17	Environmental control programs the emergence of distinct functional ensembles from unconstrained chemical reactions. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 5387-5392.	7.1	40
18	Integrated Information Theory and Isomorphic Feed-Forward Philosophical Zombies. Entropy, 2019, 21, 1073.	2.2	8

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19	Universal scaling across biochemical networks on Earth. Science Advances, 2019, 5, eaau0149.	10.3	33
20	Exoplanet Biosignatures: A Review of Remotely Detectable Signs of Life. Astrobiology, 2018, 18, 663-708.	3.0	328
21	Criticality Distinguishes the Ensemble of Biological Regulatory Networks. Physical Review Letters, 2018, 121, 138102.	7.8	91
22	Exoplanet Biosignatures: Future Directions. Astrobiology, 2018, 18, 779-824.	3.0	85
23	Network Theory in Prebiotic Evolution. Nucleic Acids and Molecular Biology, 2018, , 263-291.	0.2	9
24	Transfer of Information in Collective Decisions by Artificial Agents. , 2018, , .		8
25	Inform: Efficient Information-Theoretic Analysis of Collective Behaviors. Frontiers in Robotics and AI, 2018, 5, 60.	3.2	33
26	Exoplanet Biosignatures: At the Dawn of a New Era of Planetary Observations. Astrobiology, 2018, 18, 619-629.	3.0	54
27	Bio from Bit. The Frontiers Collection, 2018, , 77-87.	0.2	0
28	Real-world open-ended evolution: A league of legends adventure. International Journal of Design and Nature and Ecodynamics, 2018, 12, 458-469.	0.5	2
29	The â€œHard Problemâ€•of Life. , 2017, , 19-37.		27
30	Life's Information Hierarchy. , 2017, , 283-302.		26
31	Formal Definitions of Unbounded Evolution and Innovation Reveal Universal Mechanisms for Open-Ended Evolution in Dynamical Systems. Scientific Reports, 2017, 7, 997.	3.3	33
32	Origins of life: a problem for physics, a key issues review. Reports on Progress in Physics, 2017, 80, 092601.	20.1	51
33	The Emergence of Life as a First-Order Phase Transition. Astrobiology, 2017, 17, 266-276.	3.0	18
34	Cancer as a disorder of patterning information: computational and biophysical perspectives on the cancer problem. Convergent Science Physical Oncology, 2017, 3, 043001.	2.6	35
35	Re-conceptualizing the origins of life. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160337.	3.4	18
36	How causal analysis can reveal autonomy in models of biological systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160358.	3.4	41

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37	Prebiotic RNA Network Formation: A Taxonomy of Molecular Cooperation. Life, 2017, 7, 38.	2.4	12
38	Physical Universality, State-Dependent Dynamical Laws and Open-Ended Novelty. Entropy, 2017, 19, 461.	2.2	9
39	An Information-Based Classification of Elementary Cellular Automata. Complexity, 2017, 2017, 1-8.	1.6	7
40	The hidden simplicity of biology. Reports on Progress in Physics, 2016, 79, 102601.	20.1	42
41	The Astrobiology Primer v2.0. Astrobiology, 2016, 16, 561-653.	3.0	133
42	Beyond prebiotic chemistry. Science, 2016, 352, 1174-1175.	12.6	65
43	The informational architecture of the cell. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150057.	3.4	52
44	New scaling relation for information transfer in biological networks. Journal of the Royal Society Interface, 2015, 12, 20150944.	3.4	22
45	Prebiotic network evolution: six key parameters. Molecular BioSystems, 2015, 11, 3206-3217.	2.9	93
46	Is Life Fundamental?. The Frontiers Collection, 2015, , 259-268.	0.2	2
47	Quantum non-barking dogs. New Journal of Physics, 2014, 16, 063026.	2.9	4
48	Top-Down Causation and the Rise of Information in the Emergence of Life. Information (Switzerland), 2014, 5, 424-439.	2.9	42
49	Homochirality. , 2014, , 1-3.		1
50	Recycling of Informational Units Leads to Selection of Replicators in a Prebiotic Soup. Chemistry and Biology, 2013, 20, 241-252.	6.0	34
51	The algorithmic origins of life. Journal of the Royal Society Interface, 2013, 10, 20120869.	3.4	146
52	Evolutionary dynamics and information hierarchies in biological systems. Annals of the New York Academy of Sciences, 2013, 1305, 1-17.	3.8	6
53	Chiral Polymerization in Open Systems From Chiral-Selective Reaction Rates. Origins of Life and Evolution of Biospheres, 2012, 42, 333-346.	1.9	10
54	Autocatalytic Replication and Homochirality in Biopolymers: Is Homochirality a Requirement of Life or a Result of It?. Astrobiology, 2012, 12, 818-829.	3.0	41

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55	Life's chirality from prebiotic environments. International Journal of Astrobiology, 2012, 11, 287-296.	1.6	13
56	Universal Sequence Replication, Reversible Polymerization and Early Functional Biopolymers: A Model for the Initiation of Prebiotic Sequence Evolution. PLoS ONE, 2012, 7, e34166.	2.5	56
57	Homochirality. , 2011, , 759-760.		4
58	Toward Homochiral Protocells in Noncatalytic Peptide Systems. Origins of Life and Evolution of Biospheres, 2009, 39, 479-493.	1.9	18
59	An Extended Model for the Evolution of Prebiotic Homochirality: A Bottom-Up Approach to the Origin of Life. Origins of Life and Evolution of Biospheres, 2008, 38, 293-315.	1.9	32
60	Punctuated Chirality. Origins of Life and Evolution of Biospheres, 2008, 38, 499-508.	1.9	30
61	From Entropy to Information: Biased Typewriters and the Origin of Life. , 0, , 130-154.		5
62	Evolutionary Transitions and Top-Down Causation. , 0, , .		12
63	Self-Referencing Cellular Automata: A Model of the Evolution of Information Control in Biological Systems. , 0, , .		5