William Bechtel

List of Publications by Year
in descending order

84 papers	4,649 citations	147801 31 h-index	118850 62 g-index
88 all docs	88 docs citations	88 times ranked	1572 citing authors

#	Article	IF	Citations
1	Explanation: a mechanist alternative. Studies in History and Philosophy of Science Part C:Studies in History and Philosophy of Biological and Biomedical Sciences, 2005, 36, 421-441.	1.3	824
2	Discovering Complexity. , 2010, , .		369
3	Multiple Realizability Revisited: Linking Cognitive and Neural States. Philosophy of Science, 1999, 66, 175-207.	1.0	315
4	Top-down Causation Without Top-down Causes. Biology and Philosophy, 2007, 22, 547-563.	1.4	298
5	Dynamic mechanistic explanation: computational modeling of circadian rhythms as an exemplar for cognitive science. Studies in History and Philosophy of Science Part A, 2010, 41, 321-333.	1.2	196
6	Levels of description and explanation in cognitive science. Minds and Machines, 1994, 4, 1-25.	4.8	173
7	Abstraction and the Organization of Mechanisms. Philosophy of Science, 2013, 80, 241-261.	1.0	171
8	Mechanism and Biological Explanation. Philosophy of Science, 2011, 78, 533-557.	1.0	157
9	Representations and Cognitive Explanations: Assessing the Dynamicist's Challenge in Cognitive Science. Cognitive Science, 1998, 22, 295-318.	1.7	152
10	Looking down, around, and up: Mechanistic explanation in psychology. Philosophical Psychology, 2009, 22, 543-564.	0.9	101
11	ATTRIBUTING RESPONSIBILITY TO COMPUTER SYSTEMS,*. Metaphilosophy, 1985, 16, 296-306.	0.3	92
12	Dynamical Models: An Alternative or Complement to Mechanistic Explanations?. Topics in Cognitive Science, 2011, 3, 438-444.	1.9	79
13	Reconceptualizations and Interfield Connections: The Discovery of the Link between Vitamins and Coenzymes. Philosophy of Science, 1984, 51, 265-292.	1.0	64
14	Realism, Instrumentalism, and the Intentional Stance*. Cognitive Science, 1985, 9, 473-497.	1.7	62
15	Thinking Dynamically About Biological Mechanisms: Networks of Coupled Oscillators. Foundations of Science, 2013, 18, 707-723.	0.7	61
16	Circadian Rhythms and Mood Disorders: Are the Phenomena and Mechanisms Causally Related?. Frontiers in Psychiatry, 2015, 6, 118.	2.6	61
17	Decomposing the Mind-Brain: A Long-Term Pursuit. Brain and Mind, 2002, 3, 229-242.	0.6	59
18	Network analyses in systems biology: new strategies for dealing with biological complexity. SynthÃˆse, 2018, 195, 1751-1777.	1.1	56

#	Article	IF	Citations
19	Mental Mechanisms. , 0, , .		53
20	Integrating sciences by creating new disciplines: The case of cell biology. Biology and Philosophy, 1993, 8, 277-299.	1.4	52
21	Can mechanistic explanation be reconciled with scale-free constitution and dynamics?. Studies in History and Philosophy of Science Part C:Studies in History and Philosophy of Biological and Biomedical Sciences, 2015, 53, 84-93.	1.3	48
22	Investigating neural representations: the tale of place cells. SynthÃˆse, 2016, 193, 1287-1321.	1.1	47
23	Constructing a Philosophy of Science of Cognitive Science. Topics in Cognitive Science, 2009, 1, 548-569.	1.9	46
24	Rethinking Causality in Biological and Neural Mechanisms: Constraints and Control. Minds and Machines, 2018, 28, 287-310.	4.8	46
25	Explicating Top-Down Causation Using Networks and Dynamics. Philosophy of Science, 2017, 84, 253-274.	1.0	45
26	The Nonâ€Redundant Contributions of Marr's Three Levels of Analysis for Explaining Informationâ€Processing Mechanisms. Topics in Cognitive Science, 2015, 7, 312-322.	1.9	43
27	Grounding cognition: heterarchical control mechanisms in biology. Philosophical Transactions of the Royal Society B: Biological Sciences, 2021, 376, 20190751.	4.0	43
28	The evolution of our understanding of the cell: A study in the dynamics of scientific progress. Studies in History and Philosophy of Science Part A, 1984, 15, 309-356.	1.2	42
29	Mechanisms in Cognitive Psychology: What Are the Operations?. Philosophy of Science, 2008, 75, 983-994.	1.0	42
30	Complex Biological Mechanisms. , 2011, , 257-285.		41
31	Aligning Multiple Research Techniques in Cognitive Neuroscience: Why Is It Important?. Philosophy of Science, 2002, 69, S48-S58.	1.0	37
32	Why Do Biologists Use So Many Diagrams?. Philosophy of Science, 2013, 80, 931-944.	1.0	37
33	The Compatibility of Complex Systems and Reduction: A Case Analysis of Memory Research. Minds and Machines, 2001, 11, 483-502.	4.8	35
34	Generalization and Discovery by Assuming Conserved Mechanisms: Cross-Species Research on Circadian Oscillators. Philosophy of Science, 2009, 76, 762-773.	1.0	33
35	Connectionism and rules and representation systems: Are they compatible?. Philosophical Psychology, 1988, 1, 5-16.	0.9	31
36	THE CHALLENGE OF CHARACTERIZING OPERATIONS IN THE MECHANISMS UNDERLYING BEHAVIOR. Journal of the Experimental Analysis of Behavior, 2005, 84, 313-325.	1.1	30

#	Article	IF	Citations
37	The Downs and Ups of Mechanistic Research: Circadian Rhythm Research as an Exemplar. Erkenntnis, 2010, 73, 313-328.	0.9	30
38	Understanding endogenously active mechanisms: A scientific and philosophical challenge. European Journal for Philosophy of Science, 2012, 2, 233-248.	1.1	24
39	Mechanism, autonomy and biological explanation. Biology and Philosophy, 2021, 36, 1.	1.4	24
40	Analysing Network Models to Make Discoveries about Biological Mechanisms. British Journal for the Philosophy of Science, 2019, 70, 459-484.	2.3	22
41	Design sans adaptation. European Journal for Philosophy of Science, 2015, 5, 15-29.	1.1	21
42	Diagrams as Tools for Scientific Reasoning. Review of Philosophy and Psychology, 2015, 6, 117-131.	1.8	20
43	Rethinking Psychiatric Disorders in Terms of Heterarchical Networks of Control Mechanisms. , 2020, , 24-46.		20
44	Systems Biology: Negotiating Between Holism and Reductionism. History, Philosophy and Theory of the Life Sciences, 2017, , 25-36.	0.4	19
45	From molecules to behavior and the clinic: Integration in chronobiology. Studies in History and Philosophy of Science Part C:Studies in History and Philosophy of Biological and Biomedical Sciences, 2013, 44, 493-502.	1.3	18
46	The Importance of Constraints and Control in Biological Mechanisms: Insights from Cancer Research. Philosophy of Science, 2018, 85, 573-593.	1.0	17
47	Natural deduction in connectionist systems. SynthÃˆse, 1994, 101, 433-463.	1.1	16
48	Multiple levels of inquiry in cognitive science. Psychological Research, 1990, 52, 271-281.	1.7	14
49	In Search of Mitochondrial Mechanisms: Interfield Excursions between Cell Biology and Biochemistry. Journal of the History of Biology, 2007, 40, 1-33.	0.5	14
50	Scientistsâ€™ use of diagrams in developing mechanistic explanations. Pragmatics and Cognition, 2014, 22, 224-243.	0.4	14
51	Two Common Errors in Explaining Biological and Psychological Phenomena. Philosophy of Science, 1982, 49, 549-574.	1.0	14
52	How Can Philosophy Be a True Cognitive Science Discipline?. Topics in Cognitive Science, 2010, 2, 357-366.	1.9	13
53	Generalizing Mechanistic Explanations Using Graph-Theoretic Representations. History, Philosophy and Theory of the Life Sciences, 2015, , 199-225.	0.4	12
54	The cell: locus or object of inquiry?. Studies in History and Philosophy of Science Part C:Studies in History and Philosophy of Biological and Biomedical Sciences, 2010, 41, 172-182.	1.3	11

#	Article	IF	Citations
55	Using computational models to discover and understand mechanisms. Studies in History and Philosophy of Science Part A, 2016, 56, 113-121.	1.2	10
56	Mechanists Must be Holists Too! Perspectives from Circadian Biology. Journal of the History of Biology, 2016, 49, 705-731.	0.5	10
57	Hierarchy and levels: analysing networks to study mechanisms in molecular biology. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190320.	4.0	10
58	Control mechanisms: Explaining the integration and versatility of biological organisms. Adaptive Behavior, 2022, 30, 389-407.	1.9	10
59	Using the hierarchy of biological ontologies to identify mechanisms in flat networks. Biology and Philosophy, 2017, 32, 627-649.	1.4	9
60	Resituating cognitive mechanisms within heterarchical networks controlling physiology and behavior. Theory and Psychology, 2019, 29, 620-639.	1.2	9
61	Active biological mechanisms: transforming energy into motion in molecular motors. SynthÃˆse, 2021, 199, 12705-12729.	1.1	9
62	Beyond the exclusively propositional era. SynthÃˆse, 1990, 82, 223-253.	1.1	8
63	Identity, reduction, and conserved mechanisms: perspectives from circadian rhythm research. , 0, , 43-65.		7
64	Understanding Biological Mechanisms: Using Illustrations from Circadian Rhythm Research. History, Philosophy and Theory of the Life Sciences, 2013, , 487-510.	0.4	7
65	Sketching Biological Phenomena and Mechanisms. Topics in Cognitive Science, 2017, 9, 970-985.	1.9	7
66	From Reactive to Endogenously Active Dynamical Conceptions of the Brain. Boston Studies in the Philosophy and History of Science, 2012, , 329-366.	0.9	7
67	The Endogenously Active Brain: The Need for an Alternative Cognitive Architecture. Philosophia Scientiae, 2013, , 3-30.	0.1	7
68	Addressing the Vitalistâ€™s Challenge to Mechanistic Science: Dynamic Mechanistic Explanation. History, Philosophy and Theory of the Life Sciences, 2013, , 345-370.	0.4	5
69	Organization needs organization: Understanding integrated control in living organisms. Studies in History and Philosophy of Science Part A, 2022, 93, 96-106.	1.2	5
70	HIT on the Psychometric Approach. Psychological Inquiry, 2011, 22, 108-114.	0.9	4
71	From Molecules to Networks: Adoption of Systems Approaches in Circadian Rhythm Research. , 2013, , 211-223.		4
72	Using Diagrams to Reason About Biological Mechanisms. Lecture Notes in Computer Science, 2018, , 264-279.	1.3	3

#	Article	IF	Citations
73	From parts to mechanisms: research heuristics for addressing heterogeneity in cancer genetics. History and Philosophy of the Life Sciences, 2019, 41, 27.	1.1	3
74	Data Journeys Beyond Databases in Systems Biology: Cytoscape and NDEx. , 2020, , 121-143.		3
75	Diagrammatic Reasoning. , 2017, , 605-618.		3
76	Relating Bayes to cognitive mechanisms. Behavioral and Brain Sciences, 2011, 34, 202-203.	0.7	2
77	Model Organisms for Studying Decision-Making: A Phylogenetically Expanded Perspective. Philosophy of Science, 2021, 88, 1055-1066.	1.0	2
78	Figuring out what is happening: the discovery of two electrophysiological phenomena. History and Philosophy of the Life Sciences, 2022, 44, 20.	1.1	2
79	Reductionistic Explanations of Cognitive Information Processing: Bottoming Out in Neurochemistry. Frontiers in Integrative Neuroscience, 0, 16, .	2.1	2
80	Living machines. , 2020, , 79-96.		1
81	Mechanism, Conserved. , 2013, , 1201-1204.		1
82	Mechanism, Dynamic. , 2013, , 1204-1207.		0
83	Convergent Evolution. , 2013, , 500-500.		0
84	Discovering control mechanisms: The controllers of dynein. Philosophy of Science, 0, , 1-12.	1.0	0