H Frederik Nijhout

List of Publications by Year
in descending order

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144 papers	10,877 citations	36203 51 h-index	32761 100 g-index
148 all docs	148 docs citations	148 times ranked	7731 citing authors

#	Article	IF	Citations
1	Evaluating old truths: Final adult size in holometabolous insects is set by the end of larval development. Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, 2023, 340, 270-276.	0.6	2
2	The development of shape. Modular control of growth in the lepidopteran forewing. Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, 2022, 338, 170-180.	0.6	1
3	The genetic control paradigm in biology: What we say, and what we are entitled to mean. Progress in Biophysics and Molecular Biology, 2022, 169-170, 89-93.	1.4	4
4	Spiracular fluttering decouples oxygen uptake and water loss: a stochastic PDE model of respiratory water loss in insects. Journal of Mathematical Biology, 2022, 84, 40.	0.8	0
5	Voltammetric Approach for Characterizing the Biophysical and Chemical Functionality of Human Induced Pluripotent Stem Cell-Derived Serotonin Neurons. Analytical Chemistry, 2022, 94, 8847-8856.	3.2	3
6	The roles of growth regulation and appendage patterning genes in the morphogenesis of treehopper pronota. Proceedings of the Royal Society B: Biological Sciences, 2022, 289, .	1.2	5
7	Inflammation-Induced Histamine Impairs the Capacity of Escitalopram to Increase Hippocampal Extracellular Serotonin. Journal of Neuroscience, 2021, 41, 6564-6577.	1.7	26
8	Genetic assimilation and accommodation: Models and mechanisms. Current Topics in Developmental Biology, 2021, 141, 337-369.	1.0	17
9	One-carbon metabolism during the menstrual cycle and pregnancy. PLoS Computational Biology, 2021, 17, e1009708.	1.5	2
10	Fast serotonin voltammetry as a versatile tool for mapping dynamic tissue architecture: I. Responses at carbon fibers describe local tissue physiology. Journal of Neurochemistry, 2020, 153, 33-50.	2.1	28
11	Regulation of phenotypic plasticity from the perspective of evolutionary developmental biology. , 2020, , 403-442.		4
12	Mechanism of threshold size assessment: Metamorphosis is triggered by the TGF-beta/Activin ligand Myoglianin. Insect Biochemistry and Molecular Biology, 2020, 126, 103452.	1.2	18
13	Autoreceptor control of serotonin dynamics. BMC Neuroscience, 2020, 21, 40.	0.8	5
14	Spiracular fluttering increases oxygen uptake. PLoS ONE, 2020, 15, e0232450.	1.1	3
15	Diverse nanostructures underlie thin ultra-black scales in butterflies. Nature Communications, 2020, 11, 1294.	5.8	36
16	Anteriorâ€“Posterior Patterning in Lepidopteran Wings. Frontiers in Ecology and Evolution, 2020, 8, .	1.1	10
17	Origin of the mechanism of phenotypic plasticity in satyrid butterfly eyespots. ELife, 2020, 9, .	2.8	31
18	Voltammetric evidence for discrete serotonin circuits, linked to specific reuptake domains, in the mouse medial prefrontal cortex. Neurochemistry International, 2019, 123, 50-58.	1.9	27

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19	Allometry, Scaling, and Ontogeny of Formâ€"An Introduction to the Symposium. Integrative and Comparative Biology, 2019, 59, 1275-1280.	0.9	6
20	Exploring the Role of Insulin Signaling in Relative Growth: A Case Study on Wing-Body Scaling in Lepidoptera. Integrative and Comparative Biology, 2019, 59, 1324-1337.	0.9	10
21	Contrasting Roles of Transcription Factors Spineless and EcR in the Highly Dynamic Chromatin Landscape of Butterfly Wing Metamorphosis. Cell Reports, 2019, 27, 1027-1038.e3.	2.9	32
22	In vivo Hippocampal Serotonin Dynamics in Male and Female Mice: Determining Effects of Acute Escitalopram Using Fast Scan Cyclic Voltammetry. Frontiers in Neuroscience, 2019, 13, 362.	1.4	46
23	Expanding the nymphalid groundplanâ€™s domain of applicability: pattern homologies in an arctiid moth (Utetheisa ornatrix). Biological Journal of the Linnean Society, 2019, 126, 912-924.	0.7	10
24	The multistep morphing of beetle horns. Science, 2019, 366, 946-947.	6.0	1
25	Larval Development: Making Ants into Soldiers. Current Biology, 2019, 29, R32-R34.	1.8	4
26	Systems biology of robustness and homeostatic mechanisms. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2019, 11, e1440.	6.6	31
27	Hormonal control of growth in the wing imaginal disks of Junonia coenia: the relative contributions of insulin and ecdysone. Development (Cambridge), 2018, 145, .	1.2	19
28	Wing morphogenesis in Lepidoptera. Progress in Biophysics and Molecular Biology, 2018, 137, 88-94.	1.4	8
29	The distinct roles of insulin signaling in polyphenic development. Current Opinion in Insect Science, 2018, 25, 58-64.	2.2	26
30	Unmodern Synthesis: Developmental Hierarchies and the Origin of Phenotypes. BioEssays, 2018, 40, 1600265.	1.2	15
31	Sex differences in hepatic one-carbon metabolism. BMC Systems Biology, 2018, 12, 89.	3.0	43
32	The Origin of Novelty Through the Evolution of Scaling Relationships. Integrative and Comparative Biology, 2017, 57, 1322-1333.	0.9	7
33	Analysis of Homeostatic Mechanisms in Biochemical Networks. Bulletin of Mathematical Biology, 2017, 79, 2534-2557.	0.9	29
34	Systems Biology of Phenotypic Robustness and Plasticity. Integrative and Comparative Biology, 2017, 57, 171-184.	0.9	61
35	A Possible Link Between Pyriproxyfen and Microcephaly. PLOS Currents, 2017, 9, .	1.4	16
36	Mathematical Models of Neuromodulation and Implications for Neurology and Psychiatry. Springer Series in Bio-/neuroinformatics, 2017, , 191-225.	0.1	1

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37	A voltammetric and mathematical analysis of histaminergic modulation of serotonin in the mouse hypothalamus. Journal of Neurochemistry, 2016, 138, 374-383.	2.1	24
38	Synergism and Antagonism of Proximate Mechanisms Enable and Constrain the Response to Simultaneous Selection on Body Size and Development Time: An Empirical Test Using Experimental Evolution. American Naturalist, 2016, 188, 499-520.	1.0	29
39	Mathematical modeling of perifusion cell culture experiments on GnRH signaling. Mathematical Biosciences, 2016, 276, 121-132.	0.9	1
40	Using mathematical models to understand metabolism, genes, and disease. BMC Biology, 2015, 13, 79.	1.7	28
41	Mathematical analysis of the regulation of competing methyltransferases. BMC Systems Biology, 2015, 9, 69.	3.0	21
42	A Quantitative Analysis of Growth and Size Regulation in Manduca sexta: The Physiological Basis of Variation in Size and Age at Metamorphosis. PLoS ONE, 2015, 10, e0127988.	1.1	48
43	A Developmental-Physiological Perspective on the Development and Evolution of Phenotypic Plasticity. Boston Studies in the Philosophy and History of Science, 2015, , 147-173.	0.4	7
44	Big or fast: two strategies in the developmental control of body size. BMC Biology, 2015, 13, 57.	1.7	22
45	Two insulin receptors determine alternative wing morphs in planthoppers. Nature, 2015, 519, 464-467.	13.7	367
46	Developmental Mechanisms of Body Size and Wing-Body Scaling in Insects. Annual Review of Entomology, 2015, 60, 141-156.	5.7	91
47	To plasticity and back again. ELife, 2015, 4, .	2.8	10
48	Metabolic Networks, Modeling. , 2015, , 895-903.		0
49	Voltammetric and mathematical evidence for dual transport mediation of serotonin clearance in vivo. Journal of Neurochemistry, 2014, 130, 351-359.	2.1	53
50	The developmental control of size in insects. Wiley Interdisciplinary Reviews: Developmental Biology, 2014, 3, 113-134.	5.9	239
51	The development of wing shape in Lepidoptera: mitotic density, not orientation, is the primary determinant of shape. Evolution & Development, 2014, 16, 68-77.	1.1	23
52	Homeostasis and Dynamic Stability of the Phenotype Link Robustness and Plasticity. Integrative and Comparative Biology, 2014, 54, 264-275.	0.9	29
53	Escape from homeostasis. Mathematical Biosciences, 2014, 257, 104-110.	0.9	34
54	Mathematical modeling of the effects of glutathione on arsenic methylation. Theoretical Biology and Medical Modelling, 2014, 11, 20.	2.1	15

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55	Targeted metabolomics and mathematical modeling demonstrate that vitamin B-6 restriction alters one-carbon metabolism in cultured HepG2 cells. American Journal of Physiology - Endocrinology and Metabolism, 2014, 307, E93-E101.	1.8	13
56	Plasticity of insect body size in response to oxygen: integrating molecular and physiological mechanisms. Current Opinion in Insect Science, 2014, 1, 59-65.	2.2	19
57	Body size determination in insects: a review and synthesis of sizeâ€•and brainâ€•dependent and independent mechanisms. Biological Reviews, 2013, 88, 944-954.	4.7	72
58	A Mathematical Model of Tryptophan Metabolism via the Kynurenine Pathway Provides Insights into the Effects of Vitamin B-6 Deficiency, Tryptophan Loading, and Induction of Tryptophan 2,3-Dioxygenase on Tryptophan Metabolites. Journal of Nutrition, 2013, 143, 1509-1519.	1.3	35
59	The relationship between intracellular and plasma levels of folate and metabolites in the methionine cycle: A model. Molecular Nutrition and Food Research, 2013, 57, 628-636.	1.5	33
60	Development of polyploidy of scale-building cells in the wings of Manduca sexta. Arthropod Structure and Development, 2013, 42, 37-46.	0.8	25
61	A new mathematical approach for qualitative modeling of the insulin-TOR-MAPK network. Frontiers in Physiology, 2013, 4, 245.	1.3	39
62	A Population Model of Folate-Mediated One-Carbon Metabolism. Nutrients, 2013, 5, 2457-2474.	1.7	31
63	The biochemistry of acetaminophen hepatotoxicity and rescue: a mathematical model. Theoretical Biology and Medical Modelling, 2012, 9, 55.	2.1	70
64	Mathematical Insights into the Effects of Levodopa. Frontiers in Integrative Neuroscience, 2012, 6, 21.	1.0	29
65	Developmental Causes of Allometry: New Models and Implications for Phenotypic Plasticity and Evolution. Integrative and Comparative Biology, 2012, 52, 43-52.	0.9	36
66	PREDICTING THE RESPONSE TO SIMULTANEOUS SELECTION: GENETIC ARCHITECTURE AND PHYSIOLOGICAL CONSTRAINTS. Evolution; International Journal of Organic Evolution, 2012, 66, 2916-2928.	1.1	22
67	Supply-Side Constraints Are Insufficient to Explain the Ontogenetic Scaling of Metabolic Rate in the Tobacco Hornworm, Manduca sexta. PLoS ONE, 2012, 7, e45455.	1.1	26
68	Mathematical model gives insights into vitamin B6 and kynurenine metabolism. FASEB Journal, 2012, 26, 1020.5.	0.2	0
69	Control of body size by oxygen supply reveals size-dependent and size-independent mechanisms of molting and metamorphosis. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 14664-14669.	3.3	152
70	Dependence of morphometric allometries on the growth kinetics of body parts. Journal of Theoretical Biology, 2011, 288, 35-43.	0.8	20
71	Mathematical model insights into arsenic detoxification. Theoretical Biology and Medical Modelling, 2011, 8, 31.	2.1	18
72	Mathematical Modeling Predicts the Effect of Folate Deficiency and Excess on Cancer-Related Biomarkers. Cancer Epidemiology Biomarkers and Prevention, 2011, 20, 1912-1917.	1.1	25

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73	The biological significance of substrate inhibition: A mechanism with diverse functions. BioEssays, 2010, 32, 422-429.	1.2	272
74	Serotonin synthesis, release and reuptake in terminals: a mathematical model. Theoretical Biology and Medical Modelling, 2010, 7, 34.	2.1	110
75	Developmental constraints on the evolution of wingâ€body allometry in Manduca sexta. Evolution & Development, 2010, 12, 592-600.	1.1	38
76	A Switch in the Control of Growth of the Wing Imaginal Disks of Manduca sexta. PLoS ONE, 2010, 5, e10723.	1.1	38
77	Evolutionary divergence of field and laboratory populations of Manduca sexta in response to hostâ€plant quality. Ecological Entomology, 2010, 35, 166-174.	1.1	22
78	Molecular and Physiological Basis of Colour Pattern Formation. Advances in Insect Physiology, 2010, , 219-265.	1.1	48
79	The Cellular and Physiological Mechanism of Wing-Body Scaling in Manduca sexta. Science, 2010, 330, 1693-1695.	6.0	65
80	Conflicting processes in the evolution of body size and development time. Philosophical Transactions of the Royal Society B: Biological Sciences, 2010, 365, 567-575.	1.8	72
81	A Mathematical Model Gives Insights into the Effects of Vitamin B-6 Deficiency on 1-Carbon and Glutathione Metabolism. Journal of Nutrition, 2009, 139, 784-791.	1.3	39
82	Homeostatic mechanisms in dopamine synthesis and release: a mathematical model. Theoretical Biology and Medical Modelling, 2009, 6, 21.	2.1	102
83	Passive and active stabilization of dopamine in the striatum. Bioscience Hypotheses, 2009, 2, 240-244.	0.2	20
84	Developmental Phenotypic Landscapes. Evolutionary Biology, 2008, 35, 100-103.	0.5	5
85	A mathematical model of glutathione metabolism. Theoretical Biology and Medical Modelling, 2008, 5, 8.	2.1	131
86	Modeling folate, one-carbon metabolism, and DNA methylation. Nutrition Reviews, 2008, 66, S27-S30.	2.6	49
87	Constraint and developmental dissociation of phenotypic integration in a genetically accommodated trait. Evolution & Development, 2008, 10, 690-699.	1.1	11
88	A mathematical model for the regulation of juvenile hormone titers. Journal of Insect Physiology, 2008, 54, 255-264.	0.9	19
89	Size Matters (but So Does Time), and It's OK to Be Different. Developmental Cell, 2008, 15, 491-492.	3.1	19
90	Mathematical Modeling of Folate Metabolism: Predicted Effects of Genetic Polymorphisms on Mechanisms and Biomarkers Relevant to Carcinogenesis. Cancer Epidemiology Biomarkers and Prevention, 2008, 17, 1822-1831.	1.1	45

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91	Environment and Genetic Accommodation. Biological Theory, 2008, 3, 204-212.	0.8	5
92	A Day in the Life of Cell Metabolism. Biological Theory, 2007, 2, 124-127.	0.8	4
93	Flavin-Dependent Thymidylate Synthase ThyX Activity: Implications for the Folate Cycle in Bacteria. Journal of Bacteriology, 2007, 189, 8537-8545.	1.0	30
94	The control of growth and differentiation of the wing imaginal disks of Manduca sexta. Developmental Biology, 2007, 302, 569-576.	0.9	82
95	Size and shape: the developmental regulation of static allometry in insects. BioEssays, 2007, 29, 536-548.	1.2	304
96	Cryptic variation in butterfly eyespot development: the importance of sample size in gene expression studies. Evolution & Development, 2007, 9, 2-9.	1.1	41
97	Propagation of Fluctuations in Biochemical Systems, I: Linear SSC Networks. Bulletin of Mathematical Biology, 2007, 69, 1791-1813.	0.9	14
98	Evolution of a Polyphenism by Genetic Accommodation. Science, 2006, 311, 650-652.	6.0	358
99	A Mathematical Model Gives Insights into Nutritional and Genetic Aspects of Folate-Mediated One-Carbon Metabolism. Journal of Nutrition, 2006, 136, 2653-2661.	1.3	126
100	In silico experimentation with a model of hepatic mitochondrial folate metabolism. Theoretical Biology and Medical Modelling, 2006, 3, 40.	2.1	51
101	Neural Tube Defects and Folate Pathway Genes: Family-Based Association Tests of Geneâ€“Gene and Geneâ€“Environment Interactions. Environmental Health Perspectives, 2006, 114, 1547-1552.	2.8	105
102	Mathematical Modeling: Epidemiology Meets Systems Biology. Cancer Epidemiology Biomarkers and Prevention, 2006, 15, 827-829.	1.1	26
103	Long-Range Allosteric Interactions between the Folate and Methionine Cycles Stabilize DNA Methylation Reaction Rate. Epigenetics, 2006, 1, 81-87.	1.3	84
104	A Physiological Perspective on the Response of Body Size and Development Time to Simultaneous Directional Selection. Integrative and Comparative Biology, 2005, 45, 525-531.	0.9	59
105	A Mathematical Model of the Folate Cycle. Journal of Biological Chemistry, 2004, 279, 55008-55016.	1.6	181
106	A mathematical model of the methionine cycle. Journal of Theoretical Biology, 2004, 226, 33-43.	0.8	86
107	The Physiological Basis of Reaction Norms: The Interaction Among Growth Rate, the Duration of Growth and Body Size. Integrative and Comparative Biology, 2004, 44, 443-449.	0.9	178
108	Tradeâ€offs during the Development of Primary and Secondary Sexual Traits in a Horned Beetle. American Naturalist, 2004, 163, 184-191.	1.0	143

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109	Development and evolution of adaptive polyphenisms. Evolution & Development, 2003, 5, 9-18.	1.1	523
110	Critical weight in the development of insect body size. Evolution & Development, 2003, 5, 188-197.	1.1	285
111	Rapid evolution of a polyphenic threshold. Evolution & Development, 2003, 5, 259-268.	1.1	133
112	Polymorphic mimicry in Papilio dardanus: mosaic dominance, big effects, and origins. Evolution & Development, 2003, 5, 579-592.	1.1	66
113	Pigmentation pattern formation in butterflies: experiments and models. Comptes Rendus - Biologies, 2003, 326, 717-727.	0.1	56
114	The control of body size in insects. Developmental Biology, 2003, 261, 1-9.	0.9	323
115	The control of growth. Development (Cambridge), 2003, 130, 5863-5867.	1.2	84
116	Nonlinear partial differential equations and applications: Bombyxin is a growth factor for wing imaginal disks in Lepidoptera. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 15446-15450.	3.3	166
117	Developmental mechanisms of threshold evolution in a polyphenic beetle. Evolution & Development, 2002, 4, 252-264.	1.1	125
118	Food availability controls the onset of metamorphosis in the dung beetleOnthophagus taurus(Coleoptera: Scarabaeidae). Physiological Entomology, 2001, 26, 173-180.	0.6	162
119	The developmental and physiological basis of body size evolution in an insect. Proceedings of the Royal Society B: Biological Sciences, 2001, 268, 1589-1593.	1.2	130
120	Control of growth and differentiation of the wing imaginal disk of Precis coenia (Lepidoptera:) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 302	0.9	48
121	The Development and Evolution of Exaggerated Morphologies in Insects. Annual Review of Entomology, 2000, 45, 661-708.	5.7	411
122	Ultrabithorax function in butterfly wings and the evolution of insect wing patterns. Current Biology, 1999, 9, 109-115.	1.8	208
123	Control Mechanisms of Polyphenic Development in Insects. BioScience, 1999, 49, 181-192.	2.2	332
124	GENETICS OF FLUCTUATING ASYMMETRY: A DEVELOPMENTAL MODEL OF DEVELOPMENTAL INSTABILITY. Evolution; International Journal of Organic Evolution, 1999, 53, 358-375.	1.1	102
125	Competition among growing organs and developmental control of morphological asymmetry. Proceedings of the Royal Society B: Biological Sciences, 1998, 265, 1135-1139.	1.2	92
126	Developmental Models and Polygenic Characters. American Naturalist, 1997, 149, 394-405.	1.0	70

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127	Developmental Perspectives on Evolution of Butterfly Mimicry. BioScience, 1994, 44, 148-157.	2.2	38
128	Symmetry systems and compartments in Lepidopteran wings: the evolution of a patterning mechanism. Development (Cambridge), 1994, 1994, 225-233.	1.2	36
129	PHENOTYPIC CORRELATION STRUCTURE AMONG ELEMENTS OF THE COLOR PATTERN IN PRECIS COENIA (LEPIDOPTERA: NYMPHALIDAE). Evolution; International Journal of Organic Evolution, 1993, 47, 593-618.	1.1	41
130	Phenotypic Correlations Structure among Elements of the Color Pattern in Precis coenia (Lepidoptera: Nymphalidae). Evolution; International Journal of Organic Evolution, 1993, 47, 593.	1.1	32
131	An analysis of the phenotypic effects of certain colour pattern genes in Heliconius (Lepidoptera:) Tj ETQq1 1 0.784314 rgBT /Overlock	0.7	36
132	Color pattern specific proteins in black scales in developing wings ofPrecis coenia HÃ¼bner (Nymphalidae, Lepidoptera). Roux's Archives of Developmental Biology, 1990, 199, 289-294.	1.2	5
133	Homologies in the colour patterns of the genus Heliconius (Lepidoptera: Nymphalidae). Biological Journal of the Linnean Society, 1988, 33, 345-365.	0.7	44
134	Soldier determination in Pheidole bicarinata: Inhibition by adult soldiers. Journal of Insect Physiology, 1984, 30, 127-135.	0.9	94
135	Soldier determination in Pheidole bicarinata: Effect of methoprene on caste and size within castes. Journal of Insect Physiology, 1983, 29, 847-854.	0.9	91
136	Juvenile Hormone and the Physiological Basis of Insect Polymorphisms. Quarterly Review of Biology, 1982, 57, 109-133.	0.0	357
137	Imaginal wing discs in larvae of the soldier caste of Pheidole bicarinata vinelandica Forel (Hymenoptera : Formicidae). Arthropod Structure and Development, 1981, 10, 131-139.	0.4	30
138	Pattern formation on lepidopteran wings: Determination of an eyespot. Developmental Biology, 1980, 80, 267-274.	0.9	212
139	Ontogeny of the color pattern on the wings ofPrecis coenia (Lepidoptera: Nymphalidae). Developmental Biology, 1980, 80, 275-288.	0.9	83
140	The rÃ1e of ecdysone in pupation of Manduca sexta. Journal of Insect Physiology, 1976, 22, 453-463.	0.9	112
141	DYNAMICS OF JUVENILE HORMONE ACTION IN LARVAE OF THE TOBACCO HORNWORM, MANDUCA SEXTA (L.). Biological Bulletin, 1975, 149, 568-579.	0.7	91
142	A THRESHOLD SIZE FOR METAMORPHOSIS IN THE TOBACCO HORNWORM, MANDUCA SEXTA (L.). Biological Bulletin, 1975, 149, 214-225.	0.7	301
143	Control of Moulting and Metamorphosis in the Tobacco Hornworm, Manduca Sexta (L.): Growth of the Last-Instar Larva and the Decision to Pupate. Journal of Experimental Biology, 1974, 61, 481-491.	0.8	328
144	Control of Moulting and Metamorphosis in the Tobacco Hornworm, Manduca Sexta (L.): Cessation of Juvenile Hormone Secretion as A Trigger for Pupation. Journal of Experimental Biology, 1974, 61, 493-501.	0.8	348