Barry Andrew Trimmer

List of Publications by Year
in descending order

99 papers	5,738 citations	117625 34 h-index	79698 73 g-index
101 all docs	101 docs citations	101 times ranked	4852 citing authors

#	Article	IF	Citations
1	MONOLITh: a soft non-pneumatic foam robot with a functional mesh skin for use in delicate environments. Advanced Robotics, 2022, 36, 359-371.	1.8	1
2	The larval scaffold controls fascicle number but is not required for formation of the dorsolongitudinal flight muscles in Manduca sexta. Arthropod Structure and Development, 2022, 68, 101170.	1.4	2
3	The design and development of Branch Bot: a branch-crawling, caterpillar-inspired, soft robot. International Journal of Robotics Research, 2021, 40, 24-36.	8.5	37
4	Proleg retractor muscles in Manduca sexta larvae are segmentally different suggesting anteroposterior specialization. Journal of Experimental Biology, 2021, 224, 1-7.	1.7	10
5	Design and Manufacturing of Tendon-Driven Soft Foam Robots. Robotica, 2020, 38, 88-105.	1.9	22
6	Local and generalized sensitization of thermally evoked defensive behavior in caterpillars. Journal of Comparative Neurology, 2020, 528, 805-815.	1.6	6
7	Metamorphosis in Insect Muscle: Insights for Engineering Muscle-Based Actuators. Tissue Engineering - Part B: Reviews, 2020, 27, 330-340.	4.8	5
8	The control of nocifensive movements in the caterpillar <i>Manduca sexta</i>. Journal of Experimental Biology, 2020, 223, .	1.7	2
9	Stepping pattern changes in the caterpillar <i>Manduca sexta</i>: the effects of orientation and substrate. Journal of Experimental Biology, 2020, 223, .	1.7	6
10	Nociceptive neurons respond to multimodal stimuli in Manduca sexta. Journal of Experimental Biology, 2020, 223, .	1.7	2
11	Metal or muscle? The future of biologically inspired robots. Science Robotics, 2020, 5, .	17.6	9
12	Quantifying Dynamic Shapes in Soft Morphologies. Soft Robotics, 2019, 6, 733-744.	8.0	9
13	Possibilities for Engineered Insect Tissue as a Food Source. Frontiers in Sustainable Food Systems, 2019, 3, .	3.9	19
14	In Vitro Insect Muscle for Tissue Engineering Applications. ACS Biomaterials Science and Engineering, 2019, 5, 1071-1082.	5.2	28
15	The neuromechanics of proleg grip release. Journal of Experimental Biology, 2018, 221, .	1.7	10
16	Caterpillar Climbing: Robust, Tension-Based Omni-Directional Locomotion. Journal of Insect Science, 2018, 18, .	1.5	5
17	Soft-bodied terrestrial invertebrates and robots. , 2018, , .		2
18	A Practical Approach to Soft Actuation. Soft Robotics, 2017, 4, 1-2.	8.0	10

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19	Passive gripper inspired by <i>Manduca sexta</i> and the Fin RayÂ® Effect. International Journal of Advanced Robotic Systems, 2017, 14, 172988141772115.	2.1	54
20	Biohybrid actuators for robotics: A review of devices actuated by living cells. Science Robotics, 2017, 2, .	17.6	334
21	Soft foam robot with caterpillar-inspired gait regimes for terrestrial locomotion. , 2017, , .		13
22	Gait control in a soft robot by sensing interactions with the environment using self-deformation. Royal Society Open Science, 2016, 3, 160766.	2.4	34
23	Autonomous decentralized control for soft-bodied caterpillar-like modular robot exploiting large and continuum deformation. , 2016, , .		5
24	Design and Locomotion Control of a Soft Robot Using Friction Manipulation and Motorâ€"Tendon Actuation. IEEE Transactions on Robotics, 2016, 32, 949-959.	10.3	77
25	Design Methodologies for Soft-Material Robots Through Additive Manufacturing, From Prototyping to Locomotion. , 2015, , .		5
26	Model-free control framework for multi-limb soft robots. , 2015, , .		23
27	Structural vibration for robotic communication and sensing on one-dimensional structures. , 2015, , .		1
28	Soft Robotics as an Emerging Academic Field. Soft Robotics, 2015, 2, 131-134.	8.0	7
29	New Developments in Soft Robotics: An Interview with Nicholas W. Bartlett and Michael T. Tolley. Soft Robotics, 2015, 2, 93-95.	8.0	0
30	Humanoids and the Emergence of Soft Robotics. Soft Robotics, 2015, 2, 129-130.	8.0	4
31	Soft Robots and Society. Soft Robotics, 2015, 2, 1-2.	8.0	5
32	Template for robust soft-body crawling with reflex-triggered gripping. Bioinspiration and Biomimetics, 2015, 10, 016018.	2.9	10
33	3D Printing Soft Materials: What Is Possible?. Soft Robotics, 2015, 2, 3-6.	8.0	34
34	Silk coating as a novel delivery system and reversible adhesive for stiffening and shaping flexible probes. Journal of Biological Methods, 2015, 2, e13.	0.6	12
35	Orientation-Dependent Changes in Single Motor Neuron Activity during Adaptive Soft-Bodied Locomotion. Brain, Behavior and Evolution, 2015, 85, 47-62.	1.7	8
36	Soft Robots and Size. Soft Robotics, 2015, 2, 49-50.	8.0	6

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37	Soft Robot Control Systems: A New Grand Challenge?. Soft Robotics, 2014, 1, 231-232.	8.0	10
38	Design of a 3D-printed soft robot with posture and steering control. , 2014, , .		43
39	Energy for Biomimetic Robots: Challenges and Solutions. Soft Robotics, 2014, 1, 106-109.	8.0	11
40	Growing and Evolving Soft Robots. Artificial Life, 2014, 20, 143-162.	1.3	68
41	Bone-Free: Soft Mechanics for Adaptive Locomotion. Integrative and Comparative Biology, 2014, 54, 1122-1135.	2.0	40
42	An Interview with George Whitesides. Soft Robotics, 2014, 1, 233-235.	8.0	5
43	Soft Robots in the News. Soft Robotics, 2014, 1, 103-105.	8.0	2
44	Soft Robotics Community Events: Meeting Different Backgrounds for Common Challenges. Soft Robotics, 2014, 1, 236-238.	8.0	12
45	A Journal of Soft Robotics: Why Now?. Soft Robotics, 2014, 1, 1-4.	8.0	42
46	A Confluence of Technology: Putting Biology into Robotics. Soft Robotics, 2014, 1, 159-160.	8.0	1
47	Soft robotics: a bioinspired evolution in robotics. Trends in Biotechnology, 2013, 31, 287-294.	9.3	1,598
48	Spatial accuracy of a rapid defense behavior in caterpillars. Journal of Experimental Biology, 2013, 216, 379-387.	1.7	10
49	Soft robots. Current Biology, 2013, 23, R639-R641.	3.9	78
50	Highly deformable 3-D printed soft robot generating inching and crawling locomotions with variable friction legs. , 2013, , .		118
51	Towards a biomorphic soft robot: Design constraints and solutions. , 2012, , .		33
52	A new bi-axial cantilever beam design for biomechanics force measurements. Journal of Biomechanics, 2012, 45, 2310-2314.	2.1	15
53	Isolation and Maintenance-Free Culture of Contractile Myotubes from Manduca sexta Embryos. PLoS ONE, 2012, 7, e31598.	2.5	26
54	GoQBot: a caterpillar-inspired soft-bodied rolling robot. Bioinspiration and Biomimetics, 2011, 6, 026007.	2.9	550

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55	Flexible parylene-based microelectrode arrays for high resolution EMG recordings in freely moving small animals. Journal of Neuroscience Methods, 2011, 195, 176-184.	2.5	68
56	Modeling locomotion of a soft-bodied arthropod using inverse dynamics. Bioinspiration and Biomimetics, 2011, 6, 016001.	2.9	35
57	The substrate as a skeleton: ground reaction forces from a soft-bodied legged animal. Journal of Experimental Biology, 2011, 214, 2451-2451.	1.7	2
58	Scaling of caterpillar body properties and its biomechanical implications for the use of a hydrostatic skeleton. Journal of Experimental Biology, 2011, 214, 1194-1204.	1.7	59
59	Caterpillar crawling over irregular terrain: anticipation and local sensing. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2010, 196, 397-406.	1.6	13
60	Visceral-Locomotory Pistoning in Crawling Caterpillars. Current Biology, 2010, 20, 1458-1463.	3.9	52
61	Motor patterns associated with crawling in a soft-bodied arthropod. Journal of Experimental Biology, 2010, 213, 2303-2309.	1.7	26
62	Caterpillars use the substrate as their external skeleton. Communicative and Integrative Biology, 2010, 3, 471-474.	1.4	21
63	The substrate as a skeleton: ground reaction forces from a soft-bodied legged animal. Journal of Experimental Biology, 2010, 213, 1133-1142.	1.7	54
64	Kinematics of horizontal and vertical caterpillar crawling. Journal of Experimental Biology, 2009, 212, 1455-1462.	1.7	47
65	Movement encoding by a stretch receptor in the soft-bodied caterpillar,<i>Manduca sexta</i>. Journal of Experimental Biology, 2009, 212, 1021-1031.	1.7	25
66	Soft-cuticle biomechanics: A constitutive model of anisotropy for caterpillar integument. Journal of Theoretical Biology, 2009, 256, 447-457.	1.7	41
67	Muscle performance in a soft-bodied terrestrial crawler: constitutive modelling of strain-rate dependency. Journal of the Royal Society Interface, 2008, 5, 349-362.	3.4	42
68	Dynamic properties of a locomotory muscle of the tobacco hornworm<i>Manduca sexta</i>during strain cycling and simulated natural crawling. Journal of Experimental Biology, 2008, 211, 873-882.	1.7	46
69	Modulation of potassium channel function confers a hyperproliferative invasive phenotype on embryonic stem cells. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 16608-16613.	7.1	101
70	New challenges in biorobotics: Incorporating soft tissue into control systems. Applied Bionics and Biomechanics, 2008, 5, 119-126.	1.1	14
71	New Challenges in Biorobotics: Incorporating Soft Tissue into Control Systems. Applied Bionics and Biomechanics, 2008, 5, 119-126.	1.1	18
72	Kinematics of Soft-bodied, Legged Locomotion in<i>Manduca sexta</i>Larvae. Biological Bulletin, 2007, 212, 130-142.	1.8	78

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73	A constitutive model for muscle properties in a soft-bodied arthropod. Journal of the Royal Society Interface, 2007, 4, 257-269.	3.4	62
74	Characterization of NO/cGMP-Mediated Responses in Identified Motoneurons. Cellular and Molecular Neurobiology, 2007, 27, 191-209.	3.3	8
75	Role of Nitric Oxide and Mitochondria in Control of Firefly Flash. Integrative and Comparative Biology, 2004, 44, 213-219.	2.0	25
76	The biomechanical and neural control of hydrostatic limb movements in <i>Manduca sexta</i>. Journal of Experimental Biology, 2004, 207, 3043-3053.	1.7	51
77	Simulation modeling of ligand receptor interactions at non-equilibrium conditions: processing of noisy inputs by ionotropic receptors. Mathematical Biosciences, 2004, 187, 93-110.	1.9	2
78	Nitric oxide signalling: insect brains and photocytes. Biochemical Society Symposia, 2004, 71, 65-83.	2.7	11
79	Antisense inhibition of neuronal nicotinic receptors in the tobacco-feeding insect,Manduca sexta. Archives of Insect Biochemistry and Physiology, 2003, 53, 172-185.	1.5	8
80	Nicotinic-acetylcholine receptors are functionally coupled to the nitric oxide/cGMP-pathway in insect neurons. Journal of Neurochemistry, 2002, 83, 421-431.	3.9	39
81	Modulation of Second Messengers in the Nervous System of Larval Manduca sexta by Muscarinic Receptors. Journal of Neurochemistry, 2002, 66, 1903-1913.	3.9	14
82	The nicotinic Î± subunit MARA1 is necessary for cholinergic evoked calcium transients in Manduca neurons. Neuroscience Letters, 2001, 313, 113-116.	2.1	19
83	Nitric Oxide and the Control of Firefly Flashing. Science, 2001, 292, 2486-2488.	12.6	147
84	Neurons involved in nitric oxide-mediated cGMP signaling in the tobacco hornworm,Manduca sexta. Journal of Comparative Neurology, 2000, 419, 422-438.	1.6	33
85	Combined kinematic and electromyographic analyses of proleg function during crawling by the caterpillar Manduca sexta. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2000, 186, 1031-1039.	1.6	32
86	Context dependency of a limb withdrawal reflex in the caterpillar Manduca sexta. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2000, 186, 1041-1048.	1.6	26
87	The role of inositol 1,4,5-trisphosphate 5-phosphatase in inositol signaling in the CNS of larval Manduca sexta. Insect Biochemistry and Molecular Biology, 1999, 29, 161-175.	2.7	6
88	Characterization of muscarinic binding sites in the central nervous system of larval Manduca sexta. Insect Biochemistry and Molecular Biology, 1996, 26, 721-732.	2.7	11
89	Current excitement from insect muscarinic receptors. Trends in Neurosciences, 1995, 18, 104-111.	8.6	65
90	Mapping of octopamine-immunoreactive neurons in the central nervous system of the lobster. Journal of Comparative Neurology, 1993, 329, 129-142.	1.6	73

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91	Muscarinic acetylcholine receptors modulate the excitability of an identified insect motoneuron. Journal of Neurophysiology, 1993, 69, 1821-1836.	1.8	73
92	Effects of Nicotinic and Muscarinic Agents on an Identified Motoneurone and its Direct Afferent Inputs in Larval <i>Manduca Sexta</i>. Journal of Experimental Biology, 1989, 144, 303-337.	1.7	127
93	Neuropeptide Y-like immunoreactivity in rat cranial parasympathetic neurons: coexistence with vasoactive intestinal peptide and choline acetyltransferase.. Proceedings of the National Academy of Sciences of the United States of America, 1987, 84, 3511-3515.	7.1	122
94	Distribution and partial characterization of FMRFamide-like peptides in the stomatogastric nervous systems of the rock crab,Cancer borealis, and the spiny lobster,Panulirus interruptus. Journal of Comparative Neurology, 1987, 259, 150-163.	1.6	163
95	FMRFamidelike peptides ofhomarus americanus: Distribution, immunocytochemical mapping, and ultrastructural localization in terminal varicosities. Journal of Comparative Neurology, 1987, 266, 1-15.	1.6	112
96	Purification and characterization of FMRFamidelike immunoreactive substances from the lobster nervous system: Isolation and sequence analysis of two closely related peptides. Journal of Comparative Neurology, 1987, 266, 16-26.	1.6	167
97	The inactivation of exogenous serotonin in the blowfly, Calliphora. Insect Biochemistry, 1985, 15, 435-442.	1.8	23
98	Inositol phosphates in the insect nervous system. Insect Biochemistry, 1985, 15, 811-815.	1.8	26
99	Serotonin and the Control of Salivation in the Blowfly <i>Calliphora</i>. Journal of Experimental Biology, 1985, 114, 307-328.	1.7	65