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	Soft robotics: a bioinspired evolution in robotics. Trends in Biotechnology, 2013, 31, 287-294.	9.3	1,598
2	GoQBot: a caterpillar-inspired soft-bodied rolling robot. Bioinspiration and Biomimetics, 2011, 6, 026007.	2.9	550
3	Biohybrid actuators for robotics: A review of devices actuated by living cells. Science Robotics, 2017, 2, .	17.6	334
4	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
5	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
6	Nitric Oxide and the Control of Firefly Flashing. Science, 2001, 292, 2486-2488.	12.6	147
7	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
8	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
9	Highly deformable 3-D printed soft robot generating inching and crawling locomotions with variable friction legs. , 2013, , .		118
10	FMRFamidelike peptides ofhomarus americanus: Distribution, immunocytochemical mapping, and ultrastructural localization in terminal varicosities. Journal of Comparative Neurology, 1987, 266, 1-15.	1.6	112
11	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
12	Kinematics of Soft-bodied, Legged Locomotion in<i>Manduca sexta</i>Larvae. Biological Bulletin, 2007, 212, 130-142.	1.8	78
13	Soft robots. Current Biology, 2013, 23, R639-R641.	3.9	78
14	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
15	Mapping of octopamine-immunoreactive neurons in the central nervous system of the lobster. Journal of Comparative Neurology, 1993, 329, 129-142.	1.6	73
16	Muscarinic acetylcholine receptors modulate the excitability of an identified insect motoneuron. Journal of Neurophysiology, 1993, 69, 1821-1836.	1.8	73
17	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
18	Growing and Evolving Soft Robots. Artificial Life, 2014, 20, 143-162.	1.3	68

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19	Current excitement from insect muscarinic receptors. Trends in Neurosciences, 1995, 18, 104-111.	8.6	65
20	Serotonin and the Control of Salivation in the Blowfly <i>Calliphora</i>. Journal of Experimental Biology, 1985, 114, 307-328.	1.7	65
21	A constitutive model for muscle properties in a soft-bodied arthropod. Journal of the Royal Society Interface, 2007, 4, 257-269.	3.4	62
22	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
23	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
24	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
25	Visceral-Locomotory Pistoning in Crawling Caterpillars. Current Biology, 2010, 20, 1458-1463.	3.9	52
26	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
27	Kinematics of horizontal and vertical caterpillar crawling. Journal of Experimental Biology, 2009, 212, 1455-1462.	1.7	47
28	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
29	Design of a 3D-printed soft robot with posture and steering control. , 2014, , .		43
30	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
31	A Journal of Soft Robotics: Why Now?. Soft Robotics, 2014, 1, 1-4.	8.0	42
32	Soft-cuticle biomechanics: A constitutive model of anisotropy for caterpillar integument. Journal of Theoretical Biology, 2009, 256, 447-457.	1.7	41
33	Bone-Free: Soft Mechanics for Adaptive Locomotion. Integrative and Comparative Biology, 2014, 54, 1122-1135.	2.0	40
34	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
35	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
36	Modeling locomotion of a soft-bodied arthropod using inverse dynamics. Bioinspiration and Biomimetics, 2011, 6, 016001.	2.9	35

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37	3D Printing Soft Materials: What Is Possible?. Soft Robotics, 2015, 2, 3-6.	8.0	34
38	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
39	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
40	Towards a biomorphic soft robot: Design constraints and solutions. , 2012, , .		33
41	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
42	In Vitro Insect Muscle for Tissue Engineering Applications. ACS Biomaterials Science and Engineering, 2019, 5, 1071-1082.	5.2	28
43	Inositol phosphates in the insect nervous system. Insect Biochemistry, 1985, 15, 811-815.	1.8	26
44	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
45	Motor patterns associated with crawling in a soft-bodied arthropod. Journal of Experimental Biology, 2010, 213, 2303-2309.	1.7	26
46	Isolation and Maintenance-Free Culture of Contractile Myotubes from Manduca sexta Embryos. PLoS ONE, 2012, 7, e31598.	2.5	26
47	Role of Nitric Oxide and Mitochondria in Control of Firefly Flash. Integrative and Comparative Biology, 2004, 44, 213-219.	2.0	25
48	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
49	The inactivation of exogenous serotonin in the blowfly, Calliphora. Insect Biochemistry, 1985, 15, 435-442.	1.8	23
50	Model-free control framework for multi-limb soft robots. , 2015, , .		23
51	Design and Manufacturing of Tendon-Driven Soft Foam Robots. Robotica, 2020, 38, 88-105.	1.9	22
52	Caterpillars use the substrate as their external skeleton. Communicative and Integrative Biology, 2010, 3, 471-474.	1.4	21
53	The nicotinic Î± subunit MARA1 is necessary for cholinergic evoked calcium transients in Manduca neurons. Neuroscience Letters, 2001, 313, 113-116.	2.1	19
54	Possibilities for Engineered Insect Tissue as a Food Source. Frontiers in Sustainable Food Systems, 2019, 3, .	3.9	19

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55	New Challenges in Biorobotics: Incorporating Soft Tissue into Control Systems. Applied Bionics and Biomechanics, 2008, 5, 119-126.	1.1	18
56	A new bi-axial cantilever beam design for biomechanics force measurements. Journal of Biomechanics, 2012, 45, 2310-2314.	2.1	15
57	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
58	New challenges in biorobotics: Incorporating soft tissue into control systems. Applied Bionics and Biomechanics, 2008, 5, 119-126.	1.1	14
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	Soft foam robot with caterpillar-inspired gait regimes for terrestrial locomotion. , 2017, , .		13
61	Soft Robotics Community Events: Meeting Different Backgrounds for Common Challenges. Soft Robotics, 2014, 1, 236-238.	8.0	12
62	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
63	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
64	Energy for Biomimetic Robots: Challenges and Solutions. Soft Robotics, 2014, 1, 106-109.	8.0	11
65	Nitric oxide signalling: insect brains and photocytes. Biochemical Society Symposia, 2004, 71, 65-83.	2.7	11
66	Spatial accuracy of a rapid defense behavior in caterpillars. Journal of Experimental Biology, 2013, 216, 379-387.	1.7	10
67	Soft Robot Control Systems: A New Grand Challenge?. Soft Robotics, 2014, 1, 231-232.	8.0	10
68	Template for robust soft-body crawling with reflex-triggered gripping. Bioinspiration and Biomimetics, 2015, 10, 016018.	2.9	10
69	A Practical Approach to Soft Actuation. Soft Robotics, 2017, 4, 1-2.	8.0	10
70	The neuromechanics of proleg grip release. Journal of Experimental Biology, 2018, 221, .	1.7	10
71	Proleg retractor muscles in Manduca sexta larvae are segmentally different suggesting anteroposterior specialization. Journal of Experimental Biology, 2021, 224, 1-7.	1.7	10
72	Quantifying Dynamic Shapes in Soft Morphologies. Soft Robotics, 2019, 6, 733-744.	8.0	9

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73	Metal or muscle? The future of biologically inspired robots. Science Robotics, 2020, 5, .	17.6	9
74	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
75	Characterization of NO/cGMP-Mediated Responses in Identified Motoneurons. Cellular and Molecular Neurobiology, 2007, 27, 191-209.	3.3	8
76	Orientation-Dependent Changes in Single Motor Neuron Activity during Adaptive Soft-Bodied Locomotion. Brain, Behavior and Evolution, 2015, 85, 47-62.	1.7	8
77	Soft Robotics as an Emerging Academic Field. Soft Robotics, 2015, 2, 131-134.	8.0	7
78	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
79	Soft Robots and Size. Soft Robotics, 2015, 2, 49-50.	8.0	6
80	Local and generalized sensitization of thermally evoked defensive behavior in caterpillars. Journal of Comparative Neurology, 2020, 528, 805-815.	1.6	6
81	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
82	An Interview with George Whitesides. Soft Robotics, 2014, 1, 233-235.	8.0	5
83	Design Methodologies for Soft-Material Robots Through Additive Manufacturing, From Prototyping to Locomotion. , 2015, , .		5
84	Soft Robots and Society. Soft Robotics, 2015, 2, 1-2.	8.0	5
85	Autonomous decentralized control for soft-bodied caterpillar-like modular robot exploiting large and continuum deformation. , 2016, , .		5
86	Caterpillar Climbing: Robust, Tension-Based Omni-Directional Locomotion. Journal of Insect Science, 2018, 18, .	1.5	5
87	Metamorphosis in Insect Muscle: Insights for Engineering Muscle-Based Actuators. Tissue Engineering - Part B: Reviews, 2020, 27, 330-340.	4.8	5
88	Humanoids and the Emergence of Soft Robotics. Soft Robotics, 2015, 2, 129-130.	8.0	4
89	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
90	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

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91	Soft Robots in the News. Soft Robotics, 2014, 1, 103-105.	8.0	2
92	The control of nocifensive movements in the caterpillar <i>Manduca sexta</i>. Journal of Experimental Biology, 2020, 223, .	1.7	2
93	Nociceptive neurons respond to multimodal stimuli in Manduca sexta. Journal of Experimental Biology, 2020, 223, .	1.7	2
94	Soft-bodied terrestrial invertebrates and robots. , 2018, , .		2
95	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
96	A Confluence of Technology: Putting Biology into Robotics. Soft Robotics, 2014, 1, 159-160.	8.0	1
97	Structural vibration for robotic communication and sensing on one-dimensional structures. , 2015, , .		1
98	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
99	New Developments in Soft Robotics: An Interview with Nicholas W. Bartlett and Michael T. Tolley. Soft Robotics, 2015, 2, 93-95.	8.0	0