John J Socha

List of Publications by Year in descending order

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Version: 2024-02-01

58 papers	1,708 citations	257450 24 h-index	289244 40 g-index
58 all docs	58 docs citations	58 times ranked	1431 citing authors

#	Article	IF	Citations
1	Increase in tracheal investment with beetle size supports hypothesis of oxygen limitation on insect gigantism. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 13198-13203.	7.1	134
2	Advances in Biological Structure, Function, and Physiology Using Synchrotron X-Ray Imaging. Annual Review of Physiology, 2008, 70, 119-142.	13.1	126
3	Real-time phase-contrast x-ray imaging: a new technique for the study of animal form and function. BMC Biology, 2007, 5, 6.	3.8	117
4	Gliding flight in the paradise tree snake. Nature, 2002, 418, 603-604.	27.8	78
5	A 3-D kinematic analysis of gliding in a flying snake, Chrysopelea paradisi. Journal of Experimental Biology, 2005, 208, 1817-1833.	1.7	77
6	Correlated patterns of tracheal compression and convective gas exchange in a carabid beetle. Journal of Experimental Biology, 2008, 211, 3409-3420.	1.7	70
7	Effects of VR System Fidelity on Analyzing Isosurface Visualization of Volume Datasets. IEEE Transactions on Visualization and Computer Graphics, 2014, 20, 513-522.	4.4	67
8	Issues of convection in insect respiration: Insights from synchrotron X-ray imaging and beyond. Respiratory Physiology and Neurobiology, 2010, 173, S65-S73.	1.6	59
9	How Locusts Breathe. Physiology, 2013, 28, 18-27.	3.1	56
10	How animals glide: from trajectory to morphology. Canadian Journal of Zoology, 2015, 93, 901-924.	1.0	54
11	Gliding Flight in Chrysopelea: Turning a Snake into a Wing. Integrative and Comparative Biology, 2011, 51, 969-982.	2.0	53
12	Visceral-Locomotory Pistoning in Crawling Caterpillars. Current Biology, 2010, 20, 1458-1463.	3.9	52
13	Biomechanics of Turtle Shells: How Whole Shells Fail in Compression. Journal of Experimental Zoology, 2013, 319, 86-98.	1.2	44
14	Aerodynamics of the flying snake Chrysopelea paradisi: how a bluff body cross-sectional shape contributes to gliding performance. Journal of Experimental Biology, 2014, 217, 382-394.	1.7	40
15	Effects of size and behavior on aerial performance of two species of flying snakes (Chrysopelea). Journal of Experimental Biology, 2005, 208, 1835-1847.	1.7	39
16	Non-equilibrium trajectory dynamics and the kinematics of gliding in a flying snake. Bioinspiration and Biomimetics, 2010, 5, 045002.	2.9	38
17	Undulation enables gliding in flying snakes. Nature Physics, 2020, 16, 974-982.	16.7	32
18	Direct visualization of hemolymph flow in the heart of a grasshopper (Schistocerca americana). BMC Physiology, 2009, 9, 2.	3.6	31

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19	Canaliculi in the tessellated skeleton of cartilaginous fishes. Journal of Applied Ichthyology, 2010, 26, 263-267.	0.7	30
20	Hypoxia-induced compression in the tracheal system of the tobacco hornworm caterpillar, Manduca sexta L.. Journal of Experimental Biology, 2013, 216, 2293-301.	1.7	30
21	Circulation in Insect Wings. Integrative and Comparative Biology, 2020, 60, 1208-1220.	2.0	30
22	Becoming airborne without legs: the kinematics of take-off in a flying snake, Chrysopelea paradisi. Journal of Experimental Biology, 2006, 209, 3358-3369.	1.7	29
23	Effects of Body Cross-sectional Shape on Flying Snake Aerodynamics. Experimental Mechanics, 2010, 50, 1335-1348.	2.0	28
24	Synchrotron X-Ray Visualisation of Ice Formation in Insects during Lethal and Non-Lethal Freezing. PLoS ONE, 2009, 4, e8259.	2.5	26
25	Lift and wakes of flying snakes. Physics of Fluids, 2014, 26, .	4.0	25
26	Going the distance: The biomechanics of gapâ€crossing behaviors. Journal of Experimental Zoology Part A: Ecological and Integrative Physiology, 2020, 333, 60-73.	1.9	24
27	Nonlinear elasticity and damping govern ultrafast dynamics in click beetles. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	24
28	A plesiosaur containing an ichthyosaur embryo as stomach contents from the Sundance Formation of the Bighorn Basin, Wyoming. Journal of Vertebrate Paleontology, 2009, 29, 1306-1310.	1.0	22
29	Tracheal compression in pupae of the beetleZophobas morio. Biology Letters, 2015, 11, 20150259.	2.3	21
30	Dogs lap using acceleration-driven open pumping. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15798-15802.	7.1	20
31	Developmental plasticity and stability in the tracheal networks supplying Drosophila flight muscle in response to rearing oxygen level. Journal of Insect Physiology, 2018, 106, 189-198.	2.0	19
32	Use of synchrotron tomography to image naturalistic anatomy in insects. Proceedings of SPIE, 2008, , .	0.8	17
33	Dynamics of tracheal compression in the horned passalus beetle. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2013, 304, R621-R627.	1.8	17
34	A theoretical analysis of pitch stability during gliding in flying snakes. Bioinspiration and Biomimetics, 2014, 9, 025014.	2.9	17
35	Burst mode pumping: A new mechanism of drinking in mosquitoes. Scientific Reports, 2018, 8, 4885.	3.3	17
36	Mechanical properties of tracheal tubes in the American cockroach (Periplaneta americana). Smart Materials and Structures, 2011, 20, 094017.	3.5	16

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37	Validity of Using Automated Two-Dimensional Video Analysis to Measure Continuous Sagittal Plane Running Kinematics. Annals of Biomedical Engineering, 2021, 49, 455-468.	2.5	16
38	Structure of tracheae and the functional implications for collapse in the American cockroach. Bioinspiration and Biomimetics, 2015, 10, 066011.	2.9	14
39	How temperature influences the viscosity of hornworm hemolymph. Journal of Experimental Biology, 2018, 221, .	1.7	11
40	Functional compartmentalization in the hemocoel of insects. Scientific Reports, 2019, 9, 6075.	3.3	11
41	Estimation of Instantaneous Gas Exchange in Flow-Through Respirometry Systems: A Modern Revision of Bartholomew's Z-Transform Method. PLoS ONE, 2015, 10, e0139508.	2.5	10
42	Control of gliding in a flying snake-inspired n -chain model. Bioinspiration and Biomimetics, 2017, 12, 066002.	2.9	10
43	A classification of user tasks in visual analysis of volume data. , 2015, , .		9
44	Global dynamics of non-equilibrium gliding in animals. Bioinspiration and Biomimetics, 2017, 12, 026013.	2.9	8
45	The aerodynamics of flying snake airfoils in tandem configuration. Journal of Experimental Biology, 2021, 224, .	1.7	8
46	Visual Acuity in the Flying Snake, Chrysopelea paradisi. Integrative and Comparative Biology, 2020, , .	2.0	6
47	Multigenerational Effects of Rearing Atmospheric Oxygen Level on the Tracheal Dimensions and Diffusing Capacities of Pupal and Adult Drosophila melanogaster. Advances in Experimental Medicine and Biology, 2016, 903, 285-300.	1.6	5
48	Frequency-specific, valveless flow control in insect-mimetic microfluidic devices. Bioinspiration and Biomimetics, 2021, 16, 036004.	2.9	4
49	The impact of sampling frequency on ground reaction force variables. Journal of Biomechanics, 2022, 135, 111034.	2.1	4
50	Of snakes and robots. Science, 2014, 346, 160-161.	12.6	3
51	Bare-Hand Volume Cracker for Raw Volume Data Analysis. Frontiers in Robotics and AI, 2016, 3, .	3.2	2
52	Recovering signals in physiological systems with large datasets. Biology Open, 2016, 5, 1163-1174.	1.2	2
53	Physiological responses to gravity in an insect. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 2180-2186.	7.1	2
54	Dynamic movements facilitate extreme gap crossing in flying snakes. Journal of Experimental Biology, 2021, 224, .	1.7	2

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55	Variation in the mechanical properties of tracheal tubes in the American cockroach. Smart Materials and Structures, 2014, 23, 057001.	3.5	1
56	Poor Leg Plumbing Design Saves Earth From Giant Bugs. FASEB Journal, 2021, 35, .	0.5	1
57	Flying lizards plan ahead to avoid clutter. Journal of Experimental Biology, 2020, 223, .	1.7	0
58	Patterns of Tracheal Compression in the Thorax of the Ground Beetle,. Yale Journal of Biology and Medicine, 2018, 91, 409-430.	0.2	0