Sharon M Swartz

List of Publications by Year
in descending order

94 papers	3,771 citations	117625 34 h-index	144013 57 g-index
99 all docs	99 docs citations	99 times ranked	2114 citing authors

#	Article	IF	Citations
1	Aeromechanics of Membrane Wings with Implications for Animal Flight. AIAA Journal, 2008, 46, 2096-2106.	2.6	210
2	THE â€˜LAW OF BONE TRANSFORMATIONâ€™: A CASE OF CRYING WOLFF?. Biological Reviews, 1991, 66, 245-271	10.4	195
3	Wing bone stresses in free flying bats and the evolution of skeletal design for flight. Nature, 1992, 359, 726-729.	27.8	164
4	Quantifying the complexity of bat wing kinematics. Journal of Theoretical Biology, 2008, 254, 604-615.	1.7	154
5	Bone modeling during growth: Dynamic strain equilibrium in the chick tibiotarsus. Calcified Tissue International, 1986, 39, 390-395.	3.1	153
6	Direct measurements of the kinematics and dynamics of bat flight. Bioinspiration and Biomimetics, 2006, 1, S10-S18.	2.9	136
7	Mechanical properties of bat wing membrane skin. Journal of Zoology, 1996, 239, 357-378.	1.7	135
8	Wake structure and wing kinematics: the flight of the lesser dog-faced fruit bat,Cynopterus brachyotis. Journal of Experimental Biology, 2010, 213, 3427-3440.	1.7	120
9	Telemetered in vivo strain analysis of locomotor mechanics of brachiating gibbons. Nature, 1989, 342, 270-272.	27.8	105
10	Time-resolved wake structure and kinematics of bat flight. Experiments in Fluids, 2009, 46, 933-943.	2.4	93
11	Design and characterization of a multi-articulated robotic bat wing. Bioinspiration and Biomimetics, 2013, 8, 016009.	2.9	92
12	Aeroecology: probing and modeling the aerosphere. Integrative and Comparative Biology, 2007, 48, 1-11.	2.0	89
13	Biomechanics of the Bat Limb Skeleton: Scaling, Material Properties and Mechanics. Cells Tissues Organs, 2008, 187, 59-84.	2.3	82
14	The effect of body size on the wing movements of pteropodid bats, with insights into thrust and lift production. Journal of Experimental Biology, 2010, 213, 4110-4122.	1.7	73
15	Kinematics of slow turn maneuvering in the fruit batCynopterus brachyotis. Journal of Experimental Biology, 2008, 211, 3478-3489.	1.7	71
16	Changes in kinematics and aerodynamics over a range of speeds inTadarida brasiliensis, the Brazilian free-tailed bat. Journal of the Royal Society Interface, 2012, 9, 1120-1130.	3.4	68
17	Allometric patterning in the limb skeleton of bats: Implications for the mechanics and energetics of powered flight. Journal of Morphology, 1997, 234, 277-294.	1.2	66
18	Ontogenetic and anatomic variation in mineralization of the wing skeleton of the Mexican freeâ€tailed bat, Tadarida brasiliensis. Journal of Zoology, 1996, 240, 411-426.	1.7	61

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19	Upstroke wing flexion and the inertial cost of bat flight. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 2945-2950.	2.6	61
20	Specialized bat tongue is a hemodynamic nectar mop. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 8852-8857.	7.1	61
21	Membrane muscle function in the compliant wings of bats. Bioinspiration and Biomimetics, 2014, 9, 025007.	2.9	60
22	Wing Structure and the Aerodynamic Basis of Flight in Bats. , 2007, , .		56
23	Curvature of the forelimb bones of anthropoid primates: Overall allometric patterns and specializations in suspensory species. American Journal of Physical Anthropology, 1990, 83, 477-498.	2.1	55
24	Falling with Style: Bats Perform Complex Aerial Rotations by Adjusting Wing Inertia. PLoS Biology, 2015, 13, e1002297.	5.6	55
25	Whole-body kinematics of a fruit bat reveal the influence of wing inertia on body accelerations. Journal of Experimental Biology, 2011, 214, 1546-1553.	1.7	54
26	Glide performance and aerodynamics of non-equilibrium glides in northern flying squirrels (Glaucomys sabrinus). Journal of the Royal Society Interface, 2013, 10, 20120794.	3.4	54
27	Airplane tracking documents the fastest flight speeds recorded for bats. Royal Society Open Science, 2016, 3, 160398.	2.4	54
28	Sutural complexity in artificially deformed human (Homo sapiens) crania. Journal of Morphology, 1992, 214, 321-332.	1.2	52
29	The functional morphology of weight bearing: limb joint surface area allometry in anthropoid primates. Journal of Zoology, 1989, 218, 441-460.	1.7	51
30	Bats go head-under-heels: the biomechanics of landing on a ceiling. Journal of Experimental Biology, 2009, 212, 945-953.	1.7	50
31	Principles and Patterns of Bat Movements: From Aerodynamics to Ecology. Quarterly Review of Biology, 2017, 92, 267-287.	0.1	46
32	Scientific Sketching for Collaborative VR Visualization Design. IEEE Transactions on Visualization and Computer Graphics, 2008, 14, 835-847.	4.4	44
33	The Aerodynamics of Compliant Membrane Wings Modeled on Mammalian Flight Mechanics. , 2006, , .		42
34	A Computational Framework for Fluid Structure Interaction in Biologically Inspired Flapping Flight. , 2007, , .		37
35	Feature article - Particle flurries synoptic 3d pulsatile flow visualization. IEEE Computer Graphics and Applications, 2004, 24, 76-85.	1.2	36
36	A wrinkle in flight: the role of elastin fibres in the mechanical behaviour of bat wing membranes. Journal of the Royal Society Interface, 2015, 12, 20141286.	3.4	35

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37	A COMPUTATIONAL MODEL FOR ESTIMATING THE MECHANICS OF HORIZONTAL FLAPPING FLIGHT IN BATS. Journal of Experimental Biology, 2001, 204, 2873-2898.	1.7	35
38	Pendular mechanics and the kinematics and energetics of brachiating locomotion. International Journal of Primatology, 1989, 10, 387-418.	1.9	34
39	How wing kinematics affect power requirements and aerodynamic force production in a robotic bat wing. Bioinspiration and Biomimetics, 2014, 9, 025008.	2.9	31
40	The aerodynamic cost of flight in the short-tailed fruit bat (Carollia perspicillata): comparing theory with measurement. Journal of the Royal Society Interface, 2014, 11, 20140147.	3.4	31
41	Spring or string: does tendon elastic action influence wing muscle mechanics in bat flight?. Proceedings of the Royal Society B: Biological Sciences, 2015, 282, 20151832.	2.6	30
42	Kinematic Plasticity during Flight in Fruit Bats: Individual Variability in Response to Loading. PLoS ONE, 2012, 7, e36665.	2.5	28
43	Wake structure and kinematics in two insectivorous bats. Philosophical Transactions of the Royal Society B: Biological Sciences, 2016, 371, 20150385.	4.0	28
44	A bird? A plane? No, it's a bat: an introduction to the biomechanics of bat flight. , 2012, , 317-352.		25
45	Flight metabolism in relation to speed in Chiroptera: Testing the U-shape paradigm in the short-tailed fruit batCarollia perspicillata. Journal of Experimental Biology, 2013, 216, 2073-80.	1.7	25
46	An aeroelastic instability provides a possible basis for the transition from gliding to flapping flight. Journal of the Royal Society Interface, 2013, 10, 20120940.	3.4	25
47	The relative importance of genetics and phenotypic plasticity in dictating bone morphology and mechanics in aged mice: Evidence from an artificial selection experiment. Zoology, 2008, 111, 135-147.	1.2	23
48	Advances in the study of bat flight: the wing and the wind. Canadian Journal of Zoology, 2015, 93, 977-990.	1.0	23
49	Variation in withinâ€bone stiffness measured by nanoindentation in mice bred for high levels of voluntary wheel running. Journal of Anatomy, 2010, 216, 121-131.	1.5	22
50	3D reconstruction of bat flight kinematics from sparse multiple views. , 2011, , .		22
51	Bats use topography and nocturnal updrafts to fly high and fast. Current Biology, 2021, 31, 1311-1316.e4.	3.9	22
52	Climbing flight performance and load carrying in lesser dog-faced fruit bats (Cynopterus) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 142 T	1.7	21
53	A mixed Von Mises distribution for modeling soft biological tissues with two distributed fiber properties. International Journal of Solids and Structures, 2012, 49, 2914-2923.	2.7	21
54	Biaxial mechanical characterization of bat wing skin. Bioinspiration and Biomimetics, 2015, 10, 036004.	2.9	20

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55	Diversity in the organization of elastin bundles and intramembranous muscles in bat wings. Journal of Anatomy, 2017, 230, 510-523.	1.5	20
56	Aeromechanics in aeroecology: flight biology in the aerosphere. Integrative and Comparative Biology, 2007, 48, 85-98.	2.0	18
57	The Aero-Mechanics of Low Aspect Ratio Compliant Membrane Wings, with Applications to Animal Flight. , 2008, , .		18
58	Hindlimb Motion during Steady Flight of the Lesser Dog-Faced Fruit Bat, Cynopterus brachyotis. PLoS ONE, 2014, 9, e98093.	2.5	18
59	The dynamics of hovering flight in hummingbirds, insects and bats with implications for aerial robotics. Bioinspiration and Biomimetics, 2019, 14, 016003.	2.9	17
60	Biochemical and Biophysical Applications of Electron Spin Resonance. Methods of Biochemical Analysis, 1983, 29, 207-324.	0.2	17
61	Multifidelity Approaches for the Computational Analysis and Design of Effective Flapping Wing Vehicles. , 2008, , .		16
62	Simplifying a wing: diversity and functional consequences of digital joint reduction in bat wings. Journal of Anatomy, 2016, 229, 114-127.	1.5	16
63	Speed-dependent modulation of wing muscle recruitment intensity and kinematics in two bat species. Journal of Experimental Biology, 2017, 220, 1820-1829.	1.7	15
64	Bats actively modulate membrane compliance to control camber and reduce drag. Journal of Experimental Biology, 2022, 225, .	1.7	15
65	Warm bodies, cool wings: regional heterothermy in flying bats. Biology Letters, 2019, 15, 20190530.	2.3	14
66	Aerodynamic Behavior of Compliant Membranes as Related to Bat Flight. , 2008, , .		13
67	Wings as inertial appendages: how bats recover from aerial stumbles. Journal of Experimental Biology, 2019, 222, .	1.7	12
68	Nanomechanical properties of wing membrane layers in the house cricket (Acheta domesticus) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 22	2.0	11
69	Biomechanical adaptation of ulnar cross-sectional morphology in brachiating primates. Journal of Morphology, 1995, 224, 111-123.	1.2	10
70	Energetically Optimal Short-Range Gliding Trajectories for Gliding Animals. AIAA Journal, 2011, 49, 2650-2657.	2.6	10
71	How Does Soft Robotics Drive Research in Animal Locomotion?. Soft Robotics, 2014, 1, 161-168.	8.0	10
72	The influence of aspect ratio and stroke pattern on force generation of a bat-inspired membrane wing. Interface Focus, 2017, 7, 20160083.	3.0	10

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73	Specialized landing maneuvers in Spix's disk-winged bats (Thyroptera tricolor) reveal linkage between roosting ecology and landing biomechanics. Journal of Experimental Biology, 2019, 222, .	1.7	10
74	Bat-Inspired Flapping Flight. , 2014, , .		9
75	Low thermal dependence of the contractile properties of a wing muscle in the bat Carollia perspicillata. Journal of Experimental Biology, 2018, 221, .	1.7	8
76	Time-resolved wake structure and kinematics of bat flight. , 2010, , 371-381.		8
77	Direct Measurements of the Kinematics and Dynamics of Bat Flight. , 2006, , .		7
78	Strain Analysis as a Tool for Functional Morphology. American Zoologist, 1991, 31, 655-669.	0.7	5
79	Guidelines for the design and control of bio-inspired hovering robots. , 2017, , .		5
80	A proximalâ€“distal difference in bat wing muscle thermal sensitivity parallels a difference in operating temperatures along the wing. Proceedings of the Royal Society B: Biological Sciences, 2021, 288, 20210009.	2.6	4
81	Polarized Image Correlation for Large Deformation Fiber Kinematics. Experimental Mechanics, 2013, 53, 1405-1413.	2.0	3
82	Advances in animal flight studies. Canadian Journal of Zoology, 2015, 93, v-vi.	1.0	2
83	Full-scale aeroelastic simulations of hovering bat flight. , 2020, , .		2
84	In-Flight Wing-Membrane Strain Measurements on Bats. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 437-445.	0.5	2
85	EVOLUTION:Into Jurassic Air. , 1998, 281, 355-356.		1
86	A Self-Excited Flapping Wing: Lift, Drag and the Implications for Biological Flight. , 2011, , .		1
87	Large-Eddy Simulations of a Flapping Plate. , 2012, , .		1
88	Allometric patterning in the limb skeleton of bats: Implications for the mechanics and energetics of powered flight. , 0, .		1
89	A comparison of thermal sensitivities of wing muscle contractile properties from a temperate and tropical bat species. Journal of Experimental Biology, 2022, , .	1.7	1
90	Skeletal biomechanics and suspensory locomotion: An in vivo bone strain analysis of brachiating gibbons. Journal of Biomechanics, 1987, 20, 895.	2.1	0

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91	Energetically Optimal Flight Trajectories for Short Range Gliding Animals. , 2009, , .		0
92	Measurement of the wake behind a bat-like flapper and the influence of the flapping frequency on lift generation. , 2011, , .		0
93	Marvelous Machines Made of Meat. Science, 2002, 295, 1650-1650.	12.6	0
94	Kinematics and Aerodynamics of Bat Flight. , 2008, , .		0