

# Elizabeth Brainerd

## List of Publications by Year in descending order

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100  
papers

3,620  
citations

147801

31  
h-index

155660

55  
g-index

101  
all docs

101  
docs citations

101  
times ranked

2439  
citing authors

#	ARTICLE	IF	CITATIONS
1	X-ray reconstruction of moving morphology (XROMM): precision, accuracy and applications in comparative biomechanics research. <i>Journal of Experimental Zoology</i> , 2010, 313A, 262-279.	1.2	310
2	Variable gearing in pennate muscles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 1745-1750.	7.1	295
3	Convergence in the Feeding Mechanics of Ecomorphologically Similar Species in the Centrarchidae and Cichlidae. <i>Journal of Experimental Biology</i> , 1993, 176, 11-29.	1.7	241
4	Validation of XMLab software for marker-based XROMM. <i>Journal of Experimental Biology</i> , 2016, 219, 3701-3711.	1.7	155
5	Swimming muscles power suction feeding in largemouth bass. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 8690-8695.	7.1	153
6	Vertebral Column Morphology, C-Start Curvature, and the Evolution of Mechanical Defenses in Tetraodontiform Fishes. <i>Copeia</i> , 1998, 1998, 971.	1.3	111
7	Contribution of Gular Pumping to Lung Ventilation in Monitor Lizards. <i>Science</i> , 1999, 284, 1661-1663.	12.6	106
8	Static and Dynamic Error of a Biplanar Videoradiography System Using Marker-Based and Markerless Tracking Techniques. <i>Journal of Biomechanical Engineering</i> , 2011, 133, 121002.	1.3	98
9	Pufferfish inflation: Functional morphology of postcranial structures in <i>Diodon holocanthus</i> (Tetraodontiformes). <i>Journal of Morphology</i> , 1994, 220, 243-261.	1.2	95
10	Muscle fiber angle, segment bulging and architectural gear ratio in segmented musculature. <i>Journal of Experimental Biology</i> , 2005, 208, 3249-3261.	1.7	90
11	Role of axial muscles in powering mouth expansion during suction feeding in Largemouth Bass. <i>Journal of Experimental Biology</i> , 2013, 217, 1333-45.	1.7	66
12	Functional morphology and evolution of aspiration breathing in tetrapods. <i>Respiratory Physiology and Neurobiology</i> , 2006, 154, 73-88.	1.6	65
13	The Evolution of Lung-Gill Bimodal Breathing and the Homology of Vertebrate Respiratory Pumps. <i>American Zoologist</i> , 1994, 34, 289-299.	0.7	63
14	Kinematics of aquatic and terrestrial prey capture in <i>Terrapene carolina</i> , with implications for the evolution of feeding in cryptodire turtles. , 1998, 281, 280-287.		62
15	Lung ventilation in salamanders and the evolution of vertebrate air-breathing mechanisms. <i>Biological Journal of the Linnean Society</i> , 1993, 49, 163-183.	1.6	59
16	XROMM analysis of tooth occlusion and temporomandibular joint kinematics during feeding in juvenile miniature pigs. <i>Journal of Experimental Biology</i> , 2015, 218, 2573-84.	1.7	59
17	New perspectives on the evolution of lung ventilation mechanisms in vertebrates. <i>Experimental Biology Online</i> , 1999, 4, 1-28.	1.0	57
18	Kinematics of the quadrate bone during feeding in mallard ducks. <i>Journal of Experimental Biology</i> , 2011, 214, 2036-2046.	1.7	53

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19	Rolling of the jaw is essential for mammalian chewing and tribosphenic molar function. <i>Nature</i> , 2019, 566, 528-532.	27.8	53
20	Sound production during feeding in Hippocampus seahorses (Syngnathidae). <i>Environmental Biology of Fishes</i> , 1998, 51, 221-229.	1.0	49
21	Twisting and Bending: The Functional Role of Salamander Lateral Hypaxial Musculature During Locomotion. <i>Journal of Experimental Biology</i> , 2001, 204, 1979-1989.	1.7	47
22	PATTERNS OF GENOME SIZE EVOLUTION IN TETRAODONTIFORM FISHES. <i>Evolution; International Journal of Organic Evolution</i> , 2001, 55, 2363-2368.	2.3	43
23	Bite force is limited by the force-length relationship of skeletal muscle in black carp, <i>Mylopharyngodon piceus</i> . <i>Biology Letters</i> , 2013, 9, 20121181.	2.3	43
24	Flexibility in starting posture drives flexibility in kinematic behavior of the kinethmoid-mediated premaxillary protrusion mechanism in a cyprinid fish, <i>Cyprinus carpio</i> . <i>Journal of Experimental Biology</i> , 2012, 215, 2262-2272.	1.7	42
25	Stingray jaws strut their stuff. <i>Nature</i> , 1998, 395, 450-451.	27.8	40
26	Lung ventilation during treadmill locomotion in a terrestrial turtle, <i>Terrapene carolina</i> . <i>Journal of Experimental Biology</i> , 2003, 206, 3391-3404.	1.7	38
27	Feeding by mandibular raking in a snake. <i>Nature</i> , 1999, 402, 369-370.	27.8	37
28	Fluoromicrometry: A Method for Measuring Muscle Length Dynamics with Biplanar Videofluoroscopy. <i>Journal of Experimental Zoology</i> , 2016, 325, 399-408.	1.2	37
29	Caught in the crossflow. <i>Nature</i> , 2001, 412, 387-388.	27.8	36
30	Data Management Rubric for Video Data in Organismal Biology. <i>Integrative and Comparative Biology</i> , 2017, 57, 33-47.	2.0	35
31	Functional Morphology of Pufferfish Inflation: Mechanism of the Buccal Pump. <i>Copeia</i> , 1995, 1995, 614.	1.3	34
32	The Multi-Scale, Three-Dimensional Nature of Skeletal Muscle Contraction. <i>Physiology</i> , 2019, 34, 402-408.	3.1	34
33	Morphology and mechanics of myosepta in a swimming salamander ( <i>Siren lacertina</i> ). <i>Comparative Biochemistry and Physiology Part A, Molecular &amp; Integrative Physiology</i> , 2002, 133, 967-978.	1.8	32
34	Contribution of eye retraction to swallowing performance in the northern leopard frog, <i>Rana pipiens</i> . <i>Journal of Experimental Biology</i> , 2004, 207, 1361-1368.	1.7	32
35	Reevaluating Musculoskeletal Linkages in Suction-Feeding Fishes with X-Ray Reconstruction of Moving Morphology (XROMM). <i>Integrative and Comparative Biology</i> , 2015, 55, 36-47.	2.0	32
36	Convergence in morphology and masticatory function between the pharyngeal jaws of grass carp, <i>Ctenopharyngodon idella</i> , and oral jaws of amniote herbivores. <i>Journal of Experimental Biology</i> , 2014, 217, 1925-32.	1.7	29

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37	Mechanics of Lung Ventilation in a Large Aquatic Salamander, <i>Siren Lacertina</i> . Journal of Experimental Biology, 1998, 201, 673-682.	1.7	29
38	Forelimb Kinematics of Rats Using XROMM, with Implications for Small Eutherians and Their Fossil Relatives. PLoS ONE, 2016, 11, e0149377.	2.5	28
39	How snakes eat snakes: the biomechanical challenges of ophiophagy for the California kingsnake, <i>Lampropeltis getula californiae</i> (Serpentes: Colubridae). Zoology, 2004, 107, 191-200.	1.2	27
40	Bluegill sunfish use high power outputs from axial muscles to generate powerful suction-feeding strikes. Journal of Experimental Biology, 2018, 221, .	1.7	27
41	Architectural gear ratio and muscle fiber strain homogeneity in segmented musculature. Journal of Experimental Zoology, 2007, 307A, 145-155.	1.2	26
42	XROMM analysis of rib kinematics during lung ventilation in the green iguana, <i>Iguana iguana</i> . Journal of Experimental Biology, 2015, 219, 404-11.	1.7	26
43	Regional variation in morphology of vertebral centra and intervertebral joints in striped bass, <i>Morone saxatilis</i> . Journal of Morphology, 2012, 273, 441-452.	1.2	25
44	The opercular mouth-opening mechanism of largemouth bass functions as a 3D four-bar linkage with three degrees of freedom. Journal of Experimental Biology, 2017, 220, 4612-4623.	1.7	25
45	Morphological variation of hypaxial musculature in salamanders (Lissamphibia: Caudata). , 1999, 241, 153-164.		24
46	Rib kinematics during lung ventilation in the American alligator ( <i>Alligator mississippiensis</i> ): an XROMM analysis. Journal of Experimental Biology, 2017, 220, 3181-3190.	1.7	23
47	Mechanical design of polypterid fish integument for energy storage during recoil aspiration. Journal of Zoology, 1994, 232, 7-19.	1.7	22
48	X-ray motion analysis of the vertebral column during the startle response in striped bass, <i>Morone saxatilis</i> . Journal of Experimental Biology, 2013, 216, 2833-2842.	1.7	22
49	Pelvic girdle mobility of cryptodire and pleurodire turtles during walking and swimming. Journal of Experimental Biology, 2016, 219, 2650-8.	1.7	22
50	Fishes can use axial muscles as anchors or motors for powerful suction feeding. Journal of Experimental Biology, 2020, 223, .	1.7	22
51	Dual function of the pectoral girdle for feeding and locomotion in white-spotted bamboo sharks. Proceedings of the Royal Society B: Biological Sciences, 2017, 284, 20170847.	2.6	21
52	Channel catfish use higher coordination to capture prey than to swallow. Proceedings of the Royal Society B: Biological Sciences, 2019, 286, 20190507.	2.6	20
53	Buccal oscillation and lung ventilation in a semi-aquatic turtle, <i>Platysternon megacephalum</i> . Zoology, 2001, 104, 143-152.	1.2	17
54	Importance of mechanics and kinematics in determining the stiffness contribution of the vertebral column during body-caudal-fin swimming in fishes. Zoology, 2014, 117, 28-35.	1.2	17

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55	Axial morphology and 3D neurocranial kinematics in suction-feeding fishes. <i>Biology Open</i> , 2018, 7, .	1.2	17
56	Post-cranial prey transport mechanisms in the black pinesnake, <i>Pituophis melanoleucus lodingi</i> : an x-ray videographic study. <i>Zoology</i> , 2002, 105, 153-164.	1.2	16
57	Mechanics of Respiratory Pumps. <i>Fish Physiology</i> , 2005, 23, 1-28.	0.8	16
58	Effects of neonatal size on maturity and escape performance in the Trinidadian guppy. <i>Functional Ecology</i> , 2016, 30, 943-952.	3.6	15
59	Shearing overbite and asymmetrical jaw motions facilitate food breakdown in a freshwater stingray, <i>Potamotrygon motoro</i> . <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	14
60	Dual function of epaxial musculature for swimming and suction feeding in largemouth bass. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2020, 287, 20192631.	2.6	14
61	Functional morphology of durophagy in black carp, <i>Megalopharyngodon piceus</i> . <i>Journal of Morphology</i> , 2015, 276, 1422-1432.	1.2	13
62	Lung ventilation during treadmill locomotion in a semi-aquatic turtle, <i>Trachemys scripta</i> . <i>Journal of Experimental Zoology</i> , 2009, 311A, 551-562.	1.2	12
63	Mechanics of lung ventilation in a larval salamander <i>Ambystoma tigrinum</i> . <i>Journal of Experimental Biology</i> , 1998, 201, 2891-901.	1.7	12
64	Breathing with floating ribs: XROMM analysis of lung ventilation in savannah monitor lizards. <i>Journal of Experimental Biology</i> , 2018, 221, .	1.7	11
65	Regional variation in the mechanical properties of the vertebral column during lateral bending in <i>Morone saxatilis</i> . <i>Journal of the Royal Society Interface</i> , 2012, 9, 2667-2679.	3.4	10
66	Three-dimensional movements of the pectoral fin during yaw turns in the Pacific spiny dogfish, <i>Squalus suckleyi</i> . <i>Biology Open</i> , 2019, 8, .	1.2	10
67	An XROMM Study of Food Transport and Swallowing in Channel Catfish. <i>Integrative Organismal Biology</i> , 2020, 2, obaa018.	1.8	10
68	Locomotor rib kinematics in two species of lizards and a new hypothesis for the evolution of aspiration breathing in amniotes. <i>Scientific Reports</i> , 2020, 10, 7739.	3.3	10
69	Mechanics of lung ventilation in a post-metamorphic salamander, <i>Ambystoma Tigrinum</i> . <i>Journal of Experimental Biology</i> , 2000, 203, 1081-92.	1.7	10
70	Confirmation of the Passive Exhalation Hypothesis for a Terrestrial Caecilian, <i>Dermophis mexicanus</i> . <i>Copeia</i> , 1999, 1999, 206.	1.3	9
71	Morphology and Function of Lateral Hypaxial Musculature in Salamanders1. <i>American Zoologist</i> , 2000, 40, 77-86.	0.7	9
72	Patterns of musculoskeletal growth and dimensional changes associated with selection and developmental plasticity in domestic and wild strain turkeys. <i>Ecology and Evolution</i> , 2018, 8, 3229-3239.	1.9	9

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73	Intra-oropharyngeal food transport and swallowing in white-spotted bamboo sharks. <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	9
74	Waddle and shuffle: Gait alterations associated with domestication in turkeys. <i>Journal of Experimental Biology</i> , 2018, 221, .	1.7	8
75	Skeletal kinematics of the hyoid arch in the suction-feeding shark <i>Chiloscyllium plagiosum</i> . <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	8
76	Bifunctional Role of the Sternohyoideus Muscle During Suction Feeding in Striped Surfperch, <i>Embiotoca lateralis</i> . <i>Integrative Organismal Biology</i> , 2020, 2, obaa021.	1.8	8
77	Morphological and functional maturity of the oral jaws covary with offspring size in Trinidadian guppies. <i>Scientific Reports</i> , 2017, 7, 5771.	3.3	7
78	Functional Morphology of Vertebrate Feeding Systems: New Insights from XROMM and Fluoromicrometry. <i>Fascinating Life Sciences</i> , 2019, , 21-44.	0.9	7
79	Modeling the physiology of the aquatic temnospondyl <i>Archegosaurus decheni</i> from the early Permian of Germany. <i>Fossil Record</i> , 2017, 20, 105-127.	1.4	7
80	Motor control in the epaxial musculature of bluegill sunfish in feeding and locomotion. <i>Journal of Experimental Biology</i> , 2021, 224, .	1.7	7
81	A new conceptual framework for the musculoskeletal biomechanics and physiology of ray-finned fishes. <i>Journal of Experimental Biology</i> , 2022, 225, .	1.7	7
82	Heterochrony in the evolution of Trinidadian guppy offspring size: maturation along a uniform ontogenetic trajectory. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2017, 284, 20171319.	2.6	6
83	Rib Motions Don't Completely Hinge on Joint Design: Costal Joint Anatomy and Ventilatory Kinematics in a Teiid Lizard, <i>Salvator merianae</i> . <i>Integrative Organismal Biology</i> , 2019, 1, oby004.	1.8	6
84	Pectoral and pelvic girdle rotations during walking and swimming in a semi-aquatic turtle: testing functional role and constraint. <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	6
85	XROMM kinematics of ventilation in wild turkeys ( <i>Meleagris gallopavo</i> ). <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	6
86	Reply to: Jaw roll and jaw yaw in early mammals. <i>Nature</i> , 2020, 582, E9-E12.	27.8	6
87	A biomechanical paradox in fish: swimming and suction feeding produce orthogonal strain gradients in the axial musculature. <i>Scientific Reports</i> , 2021, 11, 10334.	3.3	6
88	Efficient fish not faint-hearted. <i>Nature</i> , 1997, 389, 229-230.	27.8	5
89	Morphology and Function of Lateral Hypaxial Musculature in Salamanders. <i>American Zoologist</i> , 2000, 40, 77-086.	0.7	5
90	Advancing quantitative techniques to improve understanding of the skeletal structure-function relationship. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2018, 15, 25.	4.6	5

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91	Multiple Degrees of Freedom in the Fish Skull and Their Relation to Hydraulic Transport of Prey in Channel Catfish. <i>Integrative Organismal Biology</i> , 2020, 2, obaa031.	1.8	5
92	Relaxed Feeding Constraints Facilitate the Evolution of Mouthbrooding in Neotropical Cichlids. <i>American Naturalist</i> , 2022, 199, E197-E210.	2.1	5
93	PATTERNS OF GENOME SIZE EVOLUTION IN TETRAODONTIFORM FISHES. <i>Evolution; International Journal of Organic Evolution</i> , 2001, 55, 2363.	2.3	4
94	Eye Movements in Frogs and Salamanders—Testing the Palatal Buccal Pump Hypothesis. <i>Integrative Organismal Biology</i> , 2019, 1, obz011.	1.8	4
95	Royal knifefish generate powerful suction feeding through large neurocranial elevation and high epaxial muscle power. <i>Journal of Experimental Biology</i> , 2022, 225, .	1.7	4
96	Air Breathing and Suction Feeding Kinematics in the West African Lungfish, <i>Protopterus Annectens</i> . <i>Integrative and Comparative Biology</i> , 0, , .	2.0	4
97	Modular lung ventilation in <i>Boa constrictor</i> . <i>Journal of Experimental Biology</i> , 2022, 225, .	1.7	3
98	Gastrocnemius Muscle Structural and Functional Changes Associated with Domestication in the Turkey. <i>Animals</i> , 2021, 11, 1850.	2.3	0
99	New Insights into Form–Function Relationships of Feeding Systems from XROMM and Fluoromicrometry. <i>FASEB Journal</i> , 2018, 32, .	0.5	0
100	Long-axis rotation of jaws of bamboo sharks ( <i>Chiloscyllium plagiosum</i> ) during suction feeding. <i>Integrative Organismal Biology</i> , 0, , .	1.8	0