Brian R Umberger

List of Publications by Year
in descending order

52	2,593	318942	263392
papers	citations	23 h-index	45 g-index

57	57	57	2469
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The effects of posture on the three-dimensional gait mechanics of human walking in comparison with walking in bipedal chimpanzees. Journal of Experimental Biology, 2022, 225, .	0.8	6
2	A direct collocation framework for optimal control simulation of pedaling using OpenSim. PLoS ONE, 2022, 17, e0264346.	1.1	12
3	Metabolic cost of transport and stance time asymmetry in individuals with unilateral transtibial amputation using a passive prostheses while walking. Clinical Biomechanics, 2022, 94, 105632.	0.5	7
4	EMG optimization in OpenSim: A model for estimating lower back kinetics in gait. Medical Engineering and Physics, 2022, 103, 103790.	0.8	13
5	Are lower back demands reduced by improving gait symmetry in unilateral transtibial amputees?. Clinical Biomechanics, 2022, 95, 105657.	0.5	3
6	A muscle control strategy to alter pedal force direction under multiple constraints: A simulation study. Journal of Biomechanics, 2022, 138, 111114.	0.9	1
7	Adaptations for bipedal walking: Musculoskeletal structure and three-dimensional joint mechanics of humans and bipedal chimpanzees (Pan troglodytes). Journal of Human Evolution, 2022, 168, 103195.	1.3	12
8	A modelâ€based motion capture marker location refinement approach using inverse kinematics from dynamic trials. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3283.	1.0	6
9	Inclusion of actuator dynamics in simulations of assisted human movement. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3334.	1.0	8
10	Bilevel Optimization for Cost Function Determination in Dynamic Simulation of Human Gait. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1426-1435.	2.7	46
11	Performance criteria for generating predictive optimal control simulations of bicycle pedaling. Computer Methods in Biomechanics and Biomedical Engineering, 2019, 22, 11-20.	0.9	11
12	Optimal Control Modeling of Human Movement. , 2018, , 327-348.		9
13	Three-dimensional kinematics and the origin of the hominin walking stride. Journal of the Royal Society Interface, 2018, 15, 20180205.	1.5	26
14	Chimpanzee super strength and human skeletal muscle evolution. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7343-7348.	3.3	47
15	Optimal Control Modeling of Human Movement. , 2017, , 1-22.		5
16	A Robotic Ankleâ€“Foot Prosthesis With Active Alignment. Journal of Medical Devices, Transactions of the ASME, 2016, 10, .	0.4	9
17	Commentary on the Integration of Model Sharing and Reproducibility Analysis to Scholarly Publishing Workflow in Computational Biomechanics. IEEE Transactions on Biomedical Engineering, 2016, 63, 2080-2085.	2.5	13
18	Mechanisms of in vivo muscle fatigue in humans: investigating ageâ€related fatigue resistance with a computational model. Journal of Physiology, 2016, 594, 3407-3421.	1.3	29

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19	Allometrically Scaled Childrenâ€™s Clinical and Free-Living Ambulatory Behavior. Medicine and Science in Sports and Exercise, 2016, 48, 2407-2416.	0.2	4
20	Adaptive Remodeling of Achilles Tendon: A Multi-scale Computational Model. PLoS Computational Biology, 2016, 12, e1005106.	1.5	14
21	Generating optimal control simulations of musculoskeletal movement using OpenSim and MATLAB. PeerJ, 2016, 4, e1638.	0.9	74
22	Special issue on symposia organized by the American Society of Biomechanics at the 7th World Congress of Biomechanics. Journal of Biomechanics, 2015, 48, 2835-2836.	0.9	0
23	Three-dimensional kinematics of the pelvis and hind limbs in chimpanzee (Pan troglodytes) and human bipedal walking. Journal of Human Evolution, 2015, 86, 32-42.	1.3	69
24	Center of mass mechanics of chimpanzee bipedal walking. American Journal of Physical Anthropology, 2015, 156, 422-433.	2.1	21
25	Simulation of a powered ankle prosthesis with dynamic joint alignment. , 2014, 2014, 1618-21.		11
26	A three-dimensional musculoskeletal model of the chimpanzee (Pan troglodytes) pelvis and hind limb. Journal of Experimental Biology, 2013, 216, 3709-3723.	0.8	85
27	Generation, absorption, and transfer of mechanical energy during walking in children. Medical Engineering and Physics, 2013, 35, 644-651.	0.8	9
28	Lateral wedges alter mediolateral load distributions at the knee joint in obese individuals. Journal of Orthopaedic Research, 2013, 31, 665-671.	1.2	15
29	Economy and rate of carbohydrate oxidation during running with rearfoot and forefoot strike patterns. Journal of Applied Physiology, 2013, 115, 194-201.	1.2	97
30	A Computational Model of Torque Generation: Neural, Contractile, Metabolic and Musculoskeletal Components. PLoS ONE, 2013, 8, e56013.	1.1	18
31	Evaluation of the minimum energy hypothesis and other potential optimality criteria for human running. Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 1498-1505.	1.2	94
32	Limitations to maximum sprinting speed imposed by muscle mechanical properties. Journal of Biomechanics, 2012, 45, 1092-1097.	0.9	54
33	Sensitivity of maximum sprinting speed to characteristic parameters of the muscle forceâ€“velocity relationship. Journal of Biomechanics, 2012, 45, 1406-1413.	0.9	23
34	Understanding Muscle Energetics in Locomotion. Exercise and Sport Sciences Reviews, 2011, 39, 59-67.	1.6	82
35	Comparison of hip and knee strength and neuromuscular activity in subjects with and without patellofemoral pain syndrome. International Journal of Sports Physical Therapy, 2011, 6, 285-96.	0.5	67
36	Stance and swing phase costs in human walking. Journal of the Royal Society Interface, 2010, 7, 1329-1340.	1.5	215

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37	Reliability of electromyographic methods used for assessing hip and knee neuromuscular activity in females diagnosed with patellofemoral pain syndrome. Journal of Electromyography and Kinesiology, 2010, 20, 142-147.	0.7	39
38	The relation between mild leg-length inequality and able-bodied gait asymmetry. Journal of Sports Science and Medicine, 2010, 9, 572-9.	0.7	24
39	Dynamic Optimization of Maximum-Effort Human Sprinting. , 2009, , .		0
40	Ground Reaction Forces and Lower Extremity Kinematics When Running With Suppressed Arm Swing. Journal of Biomechanical Engineering, 2009, 131, 124502.	0.6	24
41	Modeling the Efficiency of Movement: From Individual Muscles to Whole Organism. , 2009, , .		0
42	Effects of suppressing arm swing on kinematics, kinetics, and energetics of human walking. Journal of Biomechanics, 2008, 41, 2575-2580.	0.9	179
43	A test of the functional asymmetry hypothesis in walking. Gait and Posture, 2008, 28, 24-28.	0.6	111
44	Hip Strength and Hip and Knee Kinematics During Stair Descent in Females With and Without Patellofemoral Pain Syndrome. Journal of Orthopaedic and Sports Physical Therapy, 2008, 38, 12-18.	1.7	285
45	Optimal Control Solutions for a Simple Model of Human Jumping. , 2008, , .		0
46	Mechanical power and efficiency of level walking with different stride rates. Journal of Experimental Biology, 2007, 210, 3255-3265.	0.8	195
47	Simulating the Independent Effects of Muscle Fiber Type Composition on Vertical Jumping Performance. , 2007, , 13.		0
48	Muscle fiber type effects on energetically optimal cadences in cycling. Journal of Biomechanics, 2006, 39, 1472-1479.	0.9	55
49	Neuromusculoskeletal computer modeling and simulation of upright, straight-legged, bipedal locomotion ofAustralopithecus afarensis (A.L. 288-1). American Journal of Physical Anthropology, 2005, 126, 2-13.	2.1	100
50	A Model of Human Muscle Energy Expenditure. Computer Methods in Biomechanics and Biomedical Engineering, 2003, 6, 99-111.	0.9	298
51	Trends in Interdisciplinary and Integrative Graduate Training: An NSF IGERT Example. Quest, 2003, 55, 86-94.	0.8	10
52	Reliability and validity of first metatarsophalangeal joint orientation measured with an electromagnetic tracking device. Clinical Biomechanics, 1999, 14, 74-76.	0.5	46