Silvia S Blemker

List of Publications by Year
in descending order

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61 papers	2,828 citations	236925 25 h-index	182427 51 g-index
62 all docs	62 docs citations	62 times ranked	2724 citing authors

#	Article	IF	Citations
1	A 3D model of muscle reveals the causes of nonuniform strains in the biceps brachii. Journal of Biomechanics, 2005, 38, 657-665.	2.1	356
2	Three-Dimensional Representation of Complex Muscle Architectures and Geometries. Annals of Biomedical Engineering, 2005, 33, 661-673.	2.5	264
3	Relationships of 35 lower limb muscles to height and body mass quantified using MRI. Journal of Biomechanics, 2014, 47, 631-638.	2.1	245
4	Image-based musculoskeletal modeling: Applications, advances, and future opportunities. Journal of Magnetic Resonance Imaging, 2007, 25, 441-451.	3.4	200
5	Evaluation of a Deformable Musculoskeletal Model for Estimating Muscleâ€“Tendon Lengths During Crouch Gait. Annals of Biomedical Engineering, 2001, 29, 263-274.	2.5	118
6	Skeletal muscle mechanics, energetics and plasticity. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 108.	4.6	99
7	Rectus femoris and vastus intermedius fiber excursions predicted by three-dimensional muscle models. Journal of Biomechanics, 2006, 39, 1383-1391.	2.1	97
8	Heterogeneity of muscle sizes in the lower limbs of children with cerebral palsy. Muscle and Nerve, 2016, 53, 933-945.	2.2	87
9	The effects of aponeurosis geometry on strain injury susceptibility explored with a 3D muscle model. Journal of Biomechanics, 2010, 43, 2574-2581.	2.1	81
10	A mathematical model of force transmission from intrafascicularly terminating muscle fibers. Journal of Biomechanics, 2011, 44, 2031-2039.	2.1	76
11	Musculotendon variability influences tissue strains experienced by the biceps femoris long head muscle during high-speed running. Journal of Biomechanics, 2014, 47, 3325-3333.	2.1	67
12	A micromechanical model of skeletal muscle to explore the effects of fiber and fascicle geometry. Journal of Biomechanics, 2010, 43, 3207-3213.	2.1	65
13	Multiscale models of skeletal muscle reveal the complex effects of muscular dystrophy on tissue mechanics and damage susceptibility. Interface Focus, 2015, 5, 20140080.	3.0	64
14	Diminished Foot and Ankle Muscle Volumes in Young Adults With Chronic Ankle Instability. Orthopaedic Journal of Sports Medicine, 2016, 4, 232596711665371.	1.7	57
15	Quadriceps function relates to muscle size following ACL reconstruction. Journal of Orthopaedic Research, 2016, 34, 1656-1662.	2.3	57
16	MRI-Based Assessment of Lower-Extremity Muscle Volumes in Patients Before and After ACL Reconstruction. Journal of Sport Rehabilitation, 2018, 27, 201-212.	1.0	54
17	A 3D model of the Achilles tendon to determine the mechanisms underlying nonuniform tendon displacements. Journal of Biomechanics, 2017, 51, 17-25.	2.1	52
18	The passive properties of muscle fibers are velocity dependent. Journal of Biomechanics, 2014, 47, 687-693.	2.1	50

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19	Imaging two-dimensional displacements and strains in skeletal muscle during joint motion by cine DENSE MR. Journal of Biomechanics, 2008, 41, 532-540.	2.1	48
20	Activation and aponeurosis morphology affect in vivo muscle tissue strains near the myotendinous junction. Journal of Biomechanics, 2012, 45, 647-652.	2.1	47
21	Are mice good models for human neuromuscular disease? Comparing muscle excursions in walking between mice and humans. Skeletal Muscle, 2017, 7, 26.	4.2	47
22	Altered nuclear dynamics in MDX myofibers. Journal of Applied Physiology, 2017, 122, 470-481.	2.5	42
23	Computational Models Predict Larger Muscle Tissue Strains at Faster Sprinting Speeds. Medicine and Science in Sports and Exercise, 2014, 46, 776-786.	0.4	38
24	Strains at the myotendinous junction predicted by a micromechanical model. Journal of Biomechanics, 2011, 44, 2795-2801.	2.1	31
25	Structure and variability in human tongue muscle anatomy. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2018, 6, 499-507.	1.9	31
26	Agent-based model illustrates the role of the microenvironment in regeneration in healthy and mdx skeletal muscle. Journal of Applied Physiology, 2018, 125, 1424-1439.	2.5	31
27	Agent-based computational model investigates muscle-specific responses to disuse-induced atrophy. Journal of Applied Physiology, 2015, 118, 1299-1309.	2.5	28
28	Automatic segmentation of all lower limb muscles from high-resolution magnetic resonance imaging using a cascaded three-dimensional deep convolutional neural network. Journal of Medical Imaging, 2019, 6, 1.	1.5	28
29	In Silico and In Vivo Experiments Reveal M-CSF Injections Accelerate Regeneration Following Muscle Laceration. Annals of Biomedical Engineering, 2017, 45, 747-760.	2.5	27
30	Computational Modeling of Muscle Regeneration and Adaptation to Advance Muscle Tissue Regeneration Strategies. Cells Tissues Organs, 2016, 202, 250-266.	2.3	24
31	Analysis of hindlimb muscle moment arms in Tyrannosaurus rex using a three-dimensional musculoskeletal computer model: implications for stance, gait, and speed. Paleobiology, 2005, 31, 676-701.	2.0	23
32	Musculoskeletal simulation can help explain selective muscle degeneration in Duchenne muscular dystrophy. Muscle and Nerve, 2015, 52, 174-182.	2.2	21
33	In Silico and In Vivo Studies Detect Functional Repair Mechanisms in a Volumetric Muscle Loss Injury. Tissue Engineering - Part A, 2019, 25, 1272-1288.	3.1	20
34	Multiscale computational model of Achilles tendon wound healing: Untangling the effects of repair and loading. PLoS Computational Biology, 2018, 14, e1006652.	3.2	19
35	Computer models offer new insights into the mechanics of rock climbing. Sports Technology, 2012, 5, 120-131.	0.4	18
36	Diaphragm muscle fibrosis involves changes in collagen organization with mechanical implications in Duchenne muscular dystrophy. Journal of Applied Physiology, 2022, 132, 653-672.	2.5	17

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37	Assessment of velopharyngeal function with dualâ€planar highâ€resolution realâ€time spiral dynamic MRI. Magnetic Resonance in Medicine, 2018, 80, 1467-1474.	3.0	14
38	Asymmetry and Positioning of the Levator Veli Palatini Muscle in Children With Repaired Cleft Palate. Journal of Speech, Language, and Hearing Research, 2020, 63, 1317-1325.	1.6	13
39	Spatial and age-related changes in the microstructure of dystrophic and healthy diaphragms. PLoS ONE, 2017, 12, e0183853.	2.5	12
40	A Preliminary Study of Anatomical Changes Following the Use of a Pedicled Buccal Fat Pad Flap During Primary Palatoplasty. Cleft Palate-Craniofacial Journal, 2022, 59, 614-621.	0.9	12
41	Towards undistorted and noise-free speech in an MRI scanner: Correlation subtraction followed by spectral noise gating. Journal of the Acoustical Society of America, 2014, 135, 1019-1022.	1.1	11
42	Biomechanical adaptations during running differ based on type of exercise and fitness level. Gait and Posture, 2018, 60, 35-40.	1.4	11
43	A coupled framework of in situ and in silico analysis reveals the role of lateral force transmission in force production in volumetric muscle loss injuries. Journal of Biomechanics, 2019, 85, 118-125.	2.1	11
44	A 3D model of the soleus reveals effects of aponeuroses morphology and material properties on complex muscle fascicle behavior. Journal of Biomechanics, 2022, 130, 110877.	2.1	11
45	Quantitative Relationships Between Individual Lower-Limb Muscle Volumes and Jump and Sprint Performances of Basketball Players. Journal of Strength and Conditioning Research, 2020, 34, 623-631.	2.1	9
46	Muscle Eccentric Contractions Increase in Downhill and High-Grade Uphill Walking. Frontiers in Bioengineering and Biotechnology, 2020, 8, 573666.	4.1	9
47	The action of ciliary muscle contraction on accommodation of the lens explored with a 3D model. Biomechanics and Modeling in Mechanobiology, 2021, 20, 879-894.	2.8	9
48	3D Models Reveal the Influence of Achilles Subtendon Twist on Strain and Energy Storage. Frontiers in Bioengineering and Biotechnology, 2021, 9, 539135.	4.1	9
49	Agent-based model provides insight into the mechanisms behind failed regeneration following volumetric muscle loss injury. PLoS Computational Biology, 2021, 17, e1008937.	3.2	9
50	A Dynamic Magnetic Resonance Imagingâ€“Based Method to Examine In Vivo Levator Veli Palatini Muscle Function During Speech. Journal of Speech, Language, and Hearing Research, 2019, 62, 2713-2722.	1.6	9
51	Three-Dimensional Modeling of Active Muscle Tissue. , 2017, , 361-375.		8
52	Automated 3D muscle segmentation from MRI data using convolutional neural network. , 2017, , .		7
53	Data-Driven Model Validation Across Dimensions. Bulletin of Mathematical Biology, 2019, 81, 1853-1866.	1.9	7
54	Effect of Impairment-Based Rehabilitation on Lower Leg Muscle Volumes and Strength in Patients With Chronic Ankle Instability: A Preliminary Study. Journal of Sport Rehabilitation, 2019, 28, 450-458.	1.0	6

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55	Computational Models Provide Insight into In Vivo Studies and Reveal the Complex Role of Fibrosis in mdx Muscle Regeneration. Annals of Biomedical Engineering, 2021, 49, 536-547.	2.5	6
56	Sex affects gait adaptations after exercise in individuals with anterior cruciate ligament reconstruction. Clinical Biomechanics, 2020, 71, 189-195.	1.2	4
57	Achilles Tendon Morphology Is Related to Triceps Surae Muscle Size and Peak Plantarflexion Torques During Walking in Young but Not Older Adults. Frontiers in Sports and Active Living, 2020, 2, 88.	1.8	4
58	Computer Simulation and Optimization of Cranial Vault Distraction. Cleft Palate-Craniofacial Journal, 2018, 55, 356-361.	0.9	3
59	A novel ex vivo protocol to mimic human walking gait: implications for Duchenne muscular dystrophy. Journal of Applied Physiology, 2020, 129, 779-791.	2.5	2
60	Effects of rehabilitation on joint-coupling in patients with chronic ankle instability. Sports Biomechanics, 2022, 21, 472-486.	1.6	2
61	A Multiscale Perspective on Structure, Mechanics, and Function of Skeletal Muscle. , 2012, , 101-118.		0