Xiaowei Sherry Liu

List of Publications by Year
in descending order

100 papers	5,692 citations	57681 46 h-index	90395 73 g-index
105 all docs	105 docs citations	105 times ranked	6510 citing authors

#	Article	IF	Citations
1	Structural role of osteocyte lacunae on mechanical properties of bone matrix: A cohesive finite element study. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 125, 104943.	1.5	5
2	Instrumented nanoindentation in musculoskeletal research. Progress in Biophysics and Molecular Biology, 2022, 176, 38-51.	1.4	1
3	Bone marrow adipogenic lineage precursors promote osteoclastogenesis in bone remodeling and pathologic bone loss. Journal of Clinical Investigation, 2021, 131, .	3.9	101
4	Peak trabecular bone microstructure predicts rate of estrogen-deficiency-induced bone loss in rats. Bone, 2021, 145, 115862.	1.4	5
5	The critical role of Hedgehog-responsive mesenchymal progenitors in meniscus development and injury repair. ELife, 2021, 10, .	2.8	14
6	Activation, development, and attenuation of modeling- and remodeling-based bone formation in adult rats. Biomaterials, 2021, 276, 121015.	5.7	4
7	Lactation alters fluid flow and solute transport in maternal skeleton: A multiscale modeling study on the effects of microstructural changes and loading frequency. Bone, 2021, 151, 116033.	1.4	13
8	Maternal bone adaptation to mechanical loading during pregnancy, lactation, and post-weaning recovery. Bone, 2021, 151, 116031.	1.4	11
9	Reproducibility and Radiation Effect of High-Resolution In Vivo Micro Computed Tomography Imaging of the Mouse Lumbar Vertebra and Long Bone. Annals of Biomedical Engineering, 2020, 48, 157-168.	1.3	2
10	Type III collagen is a key regulator of the collagen fibrillar structure and biomechanics of articular cartilage and meniscus. Matrix Biology, 2020, 85-86, 47-67.	1.5	68
11	Mediation of Cartilage Matrix Degeneration and Fibrillation by Decorin in Postâ€traumatic Osteoarthritis. Arthritis and Rheumatology, 2020, 72, 1266-1277.	2.9	37
12	Trabecular Bone Deficit and Enhanced Anabolic Response to Re-Ambulation after Disuse in Perlecan-Deficient Skeleton. Biomolecules, 2020, 10, 198.	1.8	2
13	The importance of diversity, equity, and inclusion in orthopedic research. Journal of Orthopaedic Research, 2020, 38, 1661-1665.	1.2	10
14	Pregnancy and Lactation Impair Subchondral Bone Leading to Reduced Rat Supraspinatus Tendon-to-Bone Insertion Site Failure Properties. Journal of Biomechanical Engineering, 2020, 142, .	0.6	1
15	Short Cyclic Regimen With Parathyroid Hormone (PTH) Results in Prolonged Anabolic Effect Relative to Continuous Treatment Followed by Discontinuation in Ovariectomized Rats. Journal of Bone and Mineral Research, 2020, 37, 616-628.	3.1	4
16	Decorin Regulates the Aggrecan Network Integrity and Biomechanical Functions of Cartilage Extracellular Matrix. ACS Nano, 2019, 13, 11320-11333.	7.3	67
17	Mechanical Regulation of the Maternal Skeleton during Reproduction and Lactation. Current Osteoporosis Reports, 2019, 17, 375-386.	1.5	17
18	Periosteal Mesenchymal Progenitor Dysfunction and Extraskeletally-Derived Fibrosis Contribute to Atrophic Fracture Nonunion. Journal of Bone and Mineral Research, 2019, 34, 520-532.	3.1	35

#	Article	IF	Citations
19	Loadingâ€induced Reduction in Sclerostin as a Mechanism of Subchondral Bone PlateÂSclerosis in Mouse Knee Joints During Lateâ€Stage Osteoarthritis. Arthritis and Rheumatology, 2018, 70, 230-241.	2.9	52
20	Proteasome inhibitor bortezomib is a novel therapeutic agent for focal radiationâ€induced osteoporosis. FASEB Journal, 2018, 32, 52-62.	0.2	26
21	Effects of reproduction on sexual dimorphisms in rat bone mechanics. Journal of Biomechanics, 2018, 77, 40-47.	0.9	16
22	Structural Adaptations in the Rat Tibia Bone Induced by Pregnancy and Lactation Confer Protective Effects Against Future Estrogen Deficiency. Journal of Bone and Mineral Research, 2018, 33, 2165-2176.	3.1	12
23	Adaptations in the Microarchitecture and Load Distribution of Maternal Cortical and Trabecular Bone in Response to Multiple Reproductive Cycles in Rats. Journal of Bone and Mineral Research, 2017, 32, 1014-1026.	3.1	25
24	Clinical Evaluation of Bone Strength and Fracture Risk. Current Osteoporosis Reports, 2017, 15, 32-42.	1.5	40
25	Intermittent Parathyroid Hormone After Prolonged Alendronate Treatment Induces Substantial New Bone Formation and Increases Bone Tissue Heterogeneity in Ovariectomized Rats. Journal of Bone and Mineral Research, 2017, 32, 1703-1715.	3.1	9
26	Response to Loucks et al.â€™s Comment on â€œClinical Evaluation of Bone Strength and Fracture Riskâ€. Current Osteoporosis Reports, 2017, 15, 398-398.	1.5	0
27	Suppression of Sclerostin Alleviates Radiation-Induced Bone Loss by Protecting Bone-Forming Cells and Their Progenitors Through Distinct Mechanisms. Journal of Bone and Mineral Research, 2017, 32, 360-372.	3.1	88
28	Reproduction Differentially Affects Trabecular Bone Depending on Its Mechanical Versus Metabolic Role. Journal of Biomechanical Engineering, 2017, 139, .	0.6	14
29	Orthotopic forelimb allotransplantation in the rat model. Microsurgery, 2016, 36, 672-675.	0.6	2
30	In vivo precision of digital topological skeletonization based individual trabecula segmentation (ITS) analysis of trabecular microstructure at the distal radius and tibia by HR-pQCT. Pattern Recognition Letters, 2016, 76, 83-89.	2.6	8
31	Minimizing Interpolation Bias and Precision Error in In Vivo ÂµCT-Based Measurements of Bone Structure and Dynamics. Annals of Biomedical Engineering, 2016, 44, 2518-2528.	1.3	9
32	A comprehensive study of long-term skeletal changes after spinal cord injury in adult rats. Bone Research, 2015, 3, 15028.	5.4	22
33	Î¼CT-based, in vivo dynamic bone histomorphometry allows 3D evaluation of the early responses of bone resorption and formation to PTH and alendronate combination therapy. Bone, 2015, 73, 198-207.	1.4	32
34	PTH1â€“34 Blocks Radiation-induced Osteoblast Apoptosis by Enhancing DNA Repair through Canonical Wnt Pathway. Journal of Biological Chemistry, 2015, 290, 157-167.	1.6	51
35	Enhanced Individual Trabecular Repair and Its Mechanical Implications in Parathyroid Hormone and Alendronate Treated Rat Tibial Bone. Journal of Biomechanical Engineering, 2015, 137, .	0.6	10
36	Quantification of skeletal growth, modeling, and remodeling by in vivo micro computed tomography. Bone, 2015, 81, 370-379.	1.4	45

#	Article	IF	Citations
37	Trabecular plates and rods determine elastic modulus and yield strength of human trabecular bone. Bone, 2015, 72, 71-80.	1.4	92
38	Intervention timing of strontium treatment on estrogen depletion-induced osteoporosis in rats: Bone microstructure and mechanics. Journal of Orthopaedic Research, 2014, 32, 477-484.	1.2	5
39	Skeletal Structure in Postmenopausal Women With Osteopenia and Fractures Is Characterized by Abnormal Trabecular Plates and Cortical Thinning. Journal of Bone and Mineral Research, 2014, 29, 1101-1109.	3.1	65
40	Lower Cortical Porosity and Higher Tissue Mineral Density in Chinese American Versus White Women. Journal of Bone and Mineral Research, 2014, 29, 551-561.	3.1	32
41	A trabecular plate-like phenotype is overrepresented in Chinese-American versus Caucasian women. Osteoporosis International, 2014, 25, 2787-2795.	1.3	7
42	Kidney Transplantation with Early Corticosteroid Withdrawal. Journal of the American Society of Nephrology: JASN, 2014, 25, 1331-1341.	3.0	78
43	Dependence of mechanical properties of trabecular bone on plateâ€“rod microstructure determined by individual trabecula segmentation (ITS). Journal of Biomechanics, 2014, 47, 702-708.	0.9	56
44	Osteocyte-viability-based simulations of trabecular bone loss and recovery in disuse and reloading. Biomechanics and Modeling in Mechanobiology, 2014, 13, 153-166.	1.4	17
45	PTH1â€“34 alleviates radiotherapy-induced local bone loss by improving osteoblast and osteocyte survival. Bone, 2014, 67, 33-40.	1.4	77
46	Perlecan-Containing Pericellular Matrix Regulates Solute Transport and Mechanosensing Within the Osteocyte Lacunar-Canalicular System. Journal of Bone and Mineral Research, 2014, 29, 878-891.	3.1	82
47	A closer look at the immediate trabecula response to combined parathyroid hormone and alendronate treatment. Bone, 2014, 61, 149-157.	1.4	27
48	Exercise protocol induces muscle, tendon, and bone adaptations in the rat shoulder. Muscles, Ligaments and Tendons Journal, 2014, 4, 413-9.	0.1	19
49	3D image registration is critical to ensure accurate detection of longitudinal changes in trabecular bone density, microstructure, and stiffness measurements in rat tibiae by in vivo microcomputed tomography (Î¼CT). Bone, 2013, 56, 83-90.	1.4	40
50	PTH prevents the adverse effects of focal radiation on bone architecture in young rats. Bone, 2013, 55, 449-457.	1.4	49
51	Assessment of the Vascular and Trabecular Microstructures Using Micro Computed Tomography, Vascular Network Perfusion, and Image Registration Techniques. , 2013, , .		0
52	Abdominal Fat Is Associated With Lower Bone Formation and Inferior Bone Quality in Healthy Premenopausal Women: A Transiliac Bone Biopsy Study. Journal of Clinical Endocrinology and Metabolism, 2013, 98, 2562-2572.	1.8	165
53	Accuracy of Individual Trabecula Segmentation Based Plate and Rod Finite Element Models in Idealized Trabecular Bone Microstructure. Journal of Biomechanical Engineering, 2013, 135, 044502.	0.6	9
54	Premenopausal and postmenopausal differences in bone microstructure and mechanical competence in Chinese-American and white women. Journal of Bone and Mineral Research, 2013, 28, 1308-1318.	3.1	36

#	Article	IF	Citations
55	Fast Trabecular Bone Strength Predictions of HR-pQCT and Individual Trabeculae Segmentationâ€“Based Plate and Rod Finite Element Model Discriminate Postmenopausal Vertebral Fractures. Journal of Bone and Mineral Research, 2013, 28, 1666-1678.	3.1	26
56	Rapid cortical bone loss in patients with chronic kidney disease. Journal of Bone and Mineral Research, 2013, 28, 1811-1820.	3.1	241
57	3D In Vivo Bone Dynamic Imaging of PTHâ€™s Anabolic Action. , 2013, , .		0
58	Central QCT Reveals Lower Volumetric BMD and Stiffness in Premenopausal Women with Idiopathic Osteoporosis, Regardless of Fracture History. Journal of Clinical Endocrinology and Metabolism, 2012, 97, 4244-4252.	1.8	32
59	Microarchitectural Abnormalities Are More Severe in Postmenopausal Women with Vertebral Compared to Nonvertebral Fractures. Journal of Clinical Endocrinology and Metabolism, 2012, 97, E1918-E1926.	1.8	46
60	Individual Trabecula Segmentation (ITS)-Based Plate-Rod Microstructural Finite Element Model Predicts Nonlinear Mechanical Properties of Human Trabecular Bone. , 2012, , .		1
61	Reproducibility of Bone Microstructure and Stiffness Measurements in Rats by In Vivo Micro Computed Tomography and Finite Element Analysis. , 2012, , .		0
62	Analysis of microstructural and mechanical alterations of trabecular bone in a simulated three-dimensional remodeling process. Journal of Biomechanics, 2012, 45, 2417-2425.	0.9	29
63	Site-specific changes in bone microarchitecture, mineralization, and stiffness during lactation and after weaning in mice. Journal of Bone and Mineral Research, 2012, 27, 865-875.	3.1	73
64	Individual trabecula segmentation (ITS)-based morphological analyses and microfinite element analysis of HR-pQCT images discriminate postmenopausal fragility fractures independent of DXA measurements. Journal of Bone and Mineral Research, 2012, 27, 263-272.	3.1	111
65	The cross-talk between osteoclasts and osteoblasts in response to strontium treatment: Involvement of osteoprotegerin. Bone, 2011, 49, 1290-1298.	1.4	118
66	Influence of vertical trabeculae on the compressive strength of the human vertebra. Journal of Bone and Mineral Research, 2011, 26, 263-269.	3.1	66
67	Osteoprotegerin deficiency attenuates strontium-mediated inhibition of osteoclastogenesis and bone resorption. Journal of Bone and Mineral Research, 2011, 26, 1272-1282.	3.1	50
68	Differences in bone microarchitecture between postmenopausal Chinese-American and white women. Journal of Bone and Mineral Research, 2011, 26, 1392-1398.	3.1	63
69	Better skeletal microstructure confers greater mechanical advantages in Chinese-American women versus white women. Journal of Bone and Mineral Research, 2011, 26, 1783-1792.	3.1	80
70	Individual trabecula segmentation (ITS)â€“based morphological analysis of microscale images of human tibial trabecular bone at limited spatial resolution. Journal of Bone and Mineral Research, 2011, 26, 2184-2193.	3.1	67
71	Abnormal Microarchitecture and Stiffness in Postmenopausal Women with Ankle Fractures. Journal of Clinical Endocrinology and Metabolism, 2011, 96, 2041-2048.	1.8	56
72	Discriminants of Prevalent Fractures in Chronic Kidney Disease. Journal of the American Society of Nephrology: JASN, 2011, 22, 1560-1572.	3.0	126

#	Article	IF	Citations
73	High-resolution peripheral quantitative computed tomography can assess microstructural and mechanical properties of human distal tibial bone. Journal of Bone and Mineral Research, 2010, 25, 746-756.	3.1	160
74	Assessment of trabecular and cortical architecture and mechanical competence of bone by high-resolution peripheral computed tomography: comparison with transiliac bone biopsy. Osteoporosis International, 2010, 21, 263-273.	1.3	148
75	Bone density, geometry, microstructure, and stiffness: Relationships between peripheral and central skeletal sites assessed by DXA, HR-pQCT, and cQCT in premenopausal women. Journal of Bone and Mineral Research, 2010, 25, 2229-2238.	3.1	145
76	Abnormal microarchitecture and reduced stiffness at the radius and tibia in postmenopausal women with fractures. Journal of Bone and Mineral Research, 2010, 25, 2572-2581.	3.1	150
77	Individual trabeculae segmentation (ITS)â€“based morphological analysis of high-resolution peripheral quantitative computed tomography images detects abnormal trabecular plate and rod microarchitecture in premenopausal women with idiopathic osteoporosis. Journal of Bone and Mineral Research, 2010, 25, 1496-1505.	3.1	94
78	Skeletal microstructural abnormalities in postmenopausal women with chronic obstructive pulmonary disease. Journal of Bone and Mineral Research, 2010, 25, 1931-1940.	3.1	45
79	Accuracy of high-resolution in vivo micro magnetic resonance imaging for measurements of microstructural and mechanical properties of human distal tibial bone. Journal of Bone and Mineral Research, 2010, 25, 2039-2050.	3.1	115
80	In vivo anabolic effect of strontium on trabecular bone was associated with increased osteoblastogenesis of bone marrow stromal cells. Journal of Orthopaedic Research, 2010, 28, 1208-1214.	1.2	69
81	Type and orientation of yielded trabeculae during overloading of trabecular bone along orthogonal directions. Journal of Biomechanics, 2010, 43, 2460-2466.	0.9	37
82	Pharmacological inhibition of gut-derived serotonin synthesis is a potential bone anabolic treatment for osteoporosis. Nature Medicine, 2010, 16, 308-312.	15.2	273
83	CREB mediates brain serotonin regulation of bone mass through its expression in ventromedial hypothalamic neurons. Genes and Development, 2010, 24, 2330-2342.	2.7	105
84	Engineering anatomically shaped human bone grafts. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 3299-3304.	3.3	367
85	Quantification of trabecular bone microdamage using the virtual internal bond model and the individual trabeculae segmentation technique. Computer Methods in Biomechanics and Biomedical Engineering, 2010, 13, 605-615.	0.9	18
86	Effects of trabecular type and orientation on microdamage susceptibility in trabecular bone. Bone, 2010, 46, 1260-1266.	1.4	53
87	Computational biomechanics of the distal tibia from high-resolution MR and micro-CT images. Bone, 2010, 47, 556-563.	1.4	60
88	Signaling through the M3 Muscarinic Receptor Favors Bone Mass Accrual by Decreasing Sympathetic Activity. Cell Metabolism, 2010, 11, 231-238.	7.2	95
89	Advanced Structural Assessment of Bone Using CT and MRI. , 2010, , 547-564.		0
90	Bone Microarchitecture and Stiffness in Premenopausal Women with Idiopathic Osteoporosis. Journal of Clinical Endocrinology and Metabolism, 2009, 94, 4351-4360.	1.8	82

#	Article	IF	Citations
91	Implications of noise and resolution on mechanical properties of trabecular bone estimated by imageâ€based finiteâ€element analysis. Journal of Orthopaedic Research, 2009, 27, 1263-1271.	1.2	38
92	Micromechanical analyses of vertebral trabecular bone based on individual trabeculae segmentation of plates and rods. Journal of Biomechanics, 2009, 42, 249-256.	0.9	78
93	Contributions of trabecular rods of various orientations in determining the elastic properties of human vertebral trabecular bone. Bone, 2009, 45, 158-163.	1.4	55
94	Relationships Between Stiffness of Human Distal Tibia, Distal Radius, Proximal Femur, and Vertebral Body Assessed by HR-pQCT and cQCT Based Finite Element Analyses. , 2009, , .		0
95	A Semi-3D Real-Time Imaging Technique for Measuring Bone Cell Deformation Under Fluid Flow. , 2009, , .		0
96	Complete Volumetric Decomposition of Individual Trabecular Plates and Rods and Its Morphological Correlations With Anisotropic Elastic Moduli in Human Trabecular Bone. Journal of Bone and Mineral Research, 2008, 23, 223-235.	3.1	195
97	In Vivo Î¼MRI-Based Finite Element and Morphological Analyses of Tibial Trabecular Bone in Eugonadal and Hypogonadal Men Before and After Testosterone Treatment. Journal of Bone and Mineral Research, 2008, 23, 1426-1434.	3.1	75
98	Dynamic simulation of three dimensional architectural and mechanical alterations in human trabecular bone during menopause. Bone, 2008, 43, 292-301.	1.4	33
99	Dissociation of the neuronal regulation of bone mass and energy metabolism by leptin in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 20529-20533.	3.3	131
100	Quantification of the Roles of Trabecular Microarchitecture and Trabecular Type in Determining the Elastic Modulus of Human Trabecular Bone. Journal of Bone and Mineral Research, 2006, 21, 1608-1617.	3.1	172