Bettina M Willie

List of Publications by Year
in descending order

92	3,025	147801	189892
papers	citations	31 h-index	50 g-index

100	100	100	3737
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The enhancement of bone regeneration by ultrasound. Progress in Biophysics and Molecular Biology, 2007, 93, 384-398.	2.9	208
2	Small animal bone healing models: Standards, tips, and pitfalls results of a consensus meeting. Bone, 2011, 49, 591-599.	2.9	141
3	Diminished response to in vivo mechanical loading in trabecular and not cortical bone in adulthood of female C57Bl/6 mice coincides with a reduction in deformation to load. Bone, 2013, 55, 335-346.	2.9	123
4	Rodent animal models of delayed bone healing and non-union formation: a comprehensive review. , 2013, 26, 1-14.		116
5	Aging Leads to a Dysregulation in Mechanically Driven Bone Formation and Resorption. Journal of Bone and Mineral Research, 2015, 30, 1864-1873.	2.8	111
6	One Step Creation of Multifunctional 3D Architectured Hydrogels Inducing Bone Regeneration. Advanced Materials, 2015, 27, 1738-1744.	21.0	100
7	The influence of age on adaptive bone formation and bone resorption. Biomaterials, 2014, 35, 9290-9301.	11.4	94
8	HRâ€pQCT Measures of Bone Microarchitecture Predict Fracture: Systematic Review and Metaâ€Analysis. Journal of Bone and Mineral Research, 2020, 35, 446-459.	2.8	92
9	Mineralizing surface is the main target of mechanical stimulation independent of age: 3D dynamic in vivo morphometry. Bone, 2014, 66, 15-25.	2.9	89
10	Designing biomimetic scaffolds for bone regeneration: why aim for a copy of mature tissue properties if nature uses a different approach?. Soft Matter, 2010, 6, 4976.	2.7	88
11	Early dynamization by reduced fixation stiffness does not improve fracture healing in a rat femoral osteotomy model. Journal of Orthopaedic Research, 2009, 27, 22-27.	2.3	85
12	BMPs in bone regeneration: Less is more effective, a paradigm-shift. Cytokine and Growth Factor Reviews, 2016, 27, 141-148.	7.2	85
13	Skeletal maturity leads to a reduction in the strain magnitudes induced within the bone: A murine tibia study. Acta Biomaterialia, 2015, 13, 301-310.	8.3	75
14	The Periosteal Bone Surface is Less Mechano-Responsive than the Endocortical. Scientific Reports, 2016, 6, 23480.	3.3	75
15	The mechanoresponse of bone is closely related to the osteocyte lacunocanalicular network architecture. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 32251-32259.	7.1	69
16	Mechanical Load Modulates the Stimulatory Effect of BMP2 in a Rat Nonunion Model. Tissue Engineering - Part A, 2013, 19, 247-254.	3.1	66
17	Association between obesity and risk of fracture, bone mineral density and bone quality in adults: A systematic review and meta-analysis. PLoS ONE, 2021, 16, e0252487.	2.5	66
18	Determining relevance of a weight-bearing ovine model for bone ingrowth assessment. Journal of Biomedical Materials Research Part B, 2004, 69A, 567-576.	3.1	63

#	Article	IF	Citations
19	Late Dynamization by Reduced Fixation Stiffness Enhances Fracture Healing in a Rat Femoral Osteotomy Model. Journal of Orthopaedic Trauma, 2011, 25, 169-174.	1.4	59
20	Monitoring in vivo (re)modeling: A computational approach using 4D microCT data to quantify bone surface movements. Bone, 2015, 75, 210-221.	2.9	57
21	Experience in the Adaptive Immunity Impacts Bone Homeostasis, Remodeling, and Healing. Frontiers in Immunology, 2019, 10, 797.	4.8	57
22	Multiscale characterization of the mineral phase at skeletal sites of breast cancer metastasis. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 10542-10547.	7.1	55
23	Relationship between bone ingrowth, mineral apposition rate, and osteoblast activity. Journal of Biomedical Materials Research - Part A, 2007, 81A, 505-514.	4.0	47
24	Mechanical characterization of external fixator stiffness for a rat femoral fracture model. Journal of Orthopaedic Research, 2009, 27, 687-693.	2.3	42
25	Mechanical and structural properties of bone in non-critical and critical healing in rat. Acta Biomaterialia, 2014, 10, 4009-4019.	8.3	40
26	Tomography-Based Quantification of Regional Differences in Cortical Bone Surface Remodeling and Mechano-Response. Calcified Tissue International, 2017, 100, 255-270.	3.1	40
27	Notch pathway inhibition controls myeloma bone disease in the murine MOPC315.BM model. Blood Cancer Journal, 2014, 4, e217-e217.	6.2	38
28	Murine Axial Compression Tibial Loading Model to Study Bone Mechanobiology: Implementing the Model and Reporting Results. Journal of Orthopaedic Research, 2020, 38, 233-252.	2.3	38
29	Mechanically stimulated ATP release from murine bone cells is regulated by a balance of injury and repair. ELife, 2018, 7, .	6.0	38
30	Oxidative degradation in highly cross-linked and conventional polyethylene after 2 years of real-time shelf agingâ˜†. Biomaterials, 2006, 27, 2275-2284.	11.4	36
31	Cancellous Bone Osseointegration Is Enhanced byIn VivoLoading. Tissue Engineering - Part C: Methods, 2010, 16, 1399-1406.	2.1	36
32	Impaired proteoglycan glycosylation, elevated TGF-Î² signaling, and abnormal osteoblast differentiation as the basis for bone fragility in a mouse model for gerodermia osteodysplastica. PLoS Genetics, 2018, 14, e1007242.	3.5	36
33	Age-Related Changes in the Mechanical Regulation of Bone Healing Are Explained by Altered Cellular Mechanoresponse. Journal of Bone and Mineral Research, 2019, 34, 1923-1937.	2.8	35
34	Sost deficiency led to a greater cortical bone formation response to mechanical loading and altered gene expression. Scientific Reports, 2017, 7, 9435.	3.3	33
35	Bone adaptation: Safety factors and load predictability in shaping skeletal form. Bone, 2020, 131, 115114.	2.9	31
36	NOTCH Signaling Is Activated through Mechanical Strain in Human Bone Marrow-Derived Mesenchymal Stromal Cells. Stem Cells International, 2019, 2019, 1-13.	2.5	29

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37	Temporal Variation in Fixation Stiffness Affects Healing by Differential Cartilage Formation in a Rat Osteotomy Model. Clinical Orthopaedics and Related Research, 2011, 469, 3094-3101.	1.5	28
38	Sclerostin Neutralizing Antibody Treatment Enhances Bone Formation but Does Not Rescue Mechanically Induced Delayed Healing. Journal of Bone and Mineral Research, 2018, 33, 1686-1697.	2.8	26
39	Local BMP-2 application can rescue the delayed osteotomy healing in a rat model. Injury, 2011, 42, 746-752.	1.7	25
40	Correlations between nanostructure and micromechanical properties of healing bone. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 77, 258-266.	3.1	22
41	Examining tissue composition, whole-bone morphology and mechanical behavior of GorabPrx1 mice tibiae: A mouse model of premature aging. Journal of Biomechanics, 2017, 65, 145-153.	2.1	21
42	In Vivo and In Vitro Mechanical Loading of Mouse Achilles Tendons and Tenocytesâ€"A Pilot Study. International Journal of Molecular Sciences, 2020, 21, 1313.	4.1	21
43	Effect of in vivo loading on bone composition varies with animal age. Experimental Gerontology, 2015, 63, 48-58.	2.8	20
44	Long bone maturation is driven by pore closing: A quantitative tomography investigation of structural formation in young C57BL/6 mice. Acta Biomaterialia, 2015, 22, 92-102.	8.3	20
45	Analysis of 16 Retrieved Proximally Cemented Femoral Stems. Journal of Arthroplasty, 2005, 20, 84-93.	3.1	18
46	Surface damage analysis of retrieved highly crosslinked polyethylene tibial components after shortâ€term implantation. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2008, 85B, 114-124.	3.4	18
47	Possible explanation for the white band artifact seen in clinically retrieved polyethylene tibial components. Journal of Biomedical Materials Research Part B, 2000, 52, 558-566.	3.1	16
48	Elemental and morphological identification of third-body particulate and calcium stearate inclusions in polyethylene components. , 2000, 53, 137-142.		15
49	Bone adaptation to mechanical loading in mice is affected by circadian rhythms. Bone, 2022, 154, 116218.	2.9	15
50	Effects of Long-Term Sclerostin Deficiency on Trabecular Bone Mass and Adaption to Limb Loading Differ in Male and Female Mice. Calcified Tissue International, 2020, 106, 415-430.	3.1	13
51	Bone morphogenetic protein 2-induced cellular chemotaxis drives tissue patterning during critical-sized bone defect healing: an in silico study. Biomechanics and Modeling in Mechanobiology, 2021, 20, 1627-1644.	2.8	13
52	Quantifying the effect of resin type and sterilization method on the degradation of ultrahigh molecular weight polyethylene after 4 years of real-time shelf aging. Journal of Biomedical Materials Research Part B, 2004, 69A, 477-489.	3.1	12
53	Relationship between nanoscale mineral properties and calcein labeling in mineralizing bone surfaces. Connective Tissue Research, 2014, 55, 15-17.	2.3	12
54	Improved bone defect healing by a superagonistic GDF5 variant derived from a patient with multiple synostoses syndrome. Bone, 2015, 73, 111-119.	2.9	12

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55	A Systematic Review on Factors Associated With Percutaneous Bone Anchored Hearing Implants Loss. Otology and Neurotology, 2018, 39, e897-e906.	1.3	12
56	Osseointegration into a novel titanium foam implant in the distal femur of a rabbit. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2010, 92B, 479-488.	3.4	11
57	Compressive Strength of Iliac Bone ECM Is Not Reduced in Osteogenesis Imperfecta and Increases With Mineralization. Journal of Bone and Mineral Research, 2020, 36, 1364-1375.	2.8	11
58	Trabecular bone adaptation to loading in a rabbit model is not magnitudeâ€dependent. Journal of Orthopaedic Research, 2013, 31, 930-934.	2.3	10
59	Finite element analysis of bone strength in osteogenesis imperfecta. Bone, 2020, 133, 115250.	2.9	10
60	The combined effects of dynamization time and degree on bone healing. Journal of Orthopaedic Research, 2022, 40, 634-643.	2.3	10
61	Registering 2D and 3D imaging data of bone during healing. Connective Tissue Research, 2015, 56, 133-143.	2.3	9
62	Skeletal maturation substantially affects elastic tissue properties in the endosteal and periosteal regions of loaded mice tibiae. Acta Biomaterialia, 2015, 21, 154-164.	8.3	9
63	Mechanical loading prevents bone destruction and exerts anti-tumor effects in the MOPC315.BM.Luc model of myeloma bone disease. Acta Biomaterialia, 2021, 119, 247-258.	8.3	9
64	Sost deficiency leads to reduced mechanical strains at the tibia midshaft in strain-matched in vivo loading experiments in mice. Journal of the Royal Society Interface, 2018, 15, 20180012.	3.4	8
65	Recent advances in bone regeneration: The role of adipose tissue-derived stromal vascular fraction and mesenchymal stem cells. Journal of Limb Lengthening & Reconstruction, 2017, 3, 4.	0.6	8
66	3D Image Registration Marginally Improves the Precision of HR-pQCT Measurements Compared to Cross-Sectional-Area Registration in Adults With Osteogenesis Imperfecta. Journal of Bone and Mineral Research, 2020, 37, 908-924.	2.8	8
67	Spinal Cage Retrieval and Assessment of Biologic Response. Journal of Spinal Disorders and Techniques, 2002, 15, 206-212.	1.9	7
68	Examining the influence of shortâ€term implantation on oxidative degradation in retrieved highly crosslinked polyethylene tibial components. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2008, 85B, 385-397.	3.4	7
69	Does Using Autograft Bone Chips Achieve Consistent Bone Ingrowth in Primary TKA?. Clinical Orthopaedics and Related Research, 2012, 470, 1869-1878.	1.5	7
70	The Interaction of BMP2â€Induced Defect Healing in Rat and Fixator Stiffness Modulates Matrix Alignment and Contraction. JBMR Plus, 2018, 2, 174-186.	2.7	7
71	Heterogeneity of the osteocyte lacuno-canalicular network architecture and material characteristics across different tissue types in healing bone. Journal of Structural Biology, 2020, 212, 107616.	2.8	7
72	Decoding rejuvenating effects of mechanical loading on skeletal aging using in vivo Î¼CT imaging and deep learning. Acta Biomaterialia, 2020, 106, 193-207.	8.3	7

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73	Multisite longitudinal calibration of HR-pQCT scanners and precision in osteogenesis imperfecta. Bone, 2021, 147, 115880.	2.9	6
74	Cortical bone adaptation to a moderate level of mechanical loading in male Sost deficient mice. Scientific Reports, 2020, 10, 22299.	3.3	5
75	Enhancing the Efficiency of Distraction Osteogenesis through Rate-Varying Distraction: A Computational Study. International Journal of Molecular Sciences, 2021, 22, 11734.	4.1	5
76	In vivo and in silico monitoring bone regeneration during distraction osteogenesis of the mouse femur. Computer Methods and Programs in Biomedicine, 2022, 216, 106679.	4.7	5
77	Fabric-elasticity relationships of tibial trabecular bone are similar in osteogenesis imperfecta and healthy individuals. Bone, 2022, 155, 116282.	2.9	4
78	In vivo microCT-based time-lapse morphometry reveals anatomical site-specific differences in bone (re)modeling serving as baseline parameters to detect early pathological events. Bone, 2022, 161, 116432.	2.9	4
79	CHAPTER 2. Bone Structural Adaptation and Wolff's Law. RSC Smart Materials, 2013, , 17-45.	0.1	3
80	High resolution 3D laboratory x-ray tomography data of femora from young, 1â€“14 day old C57BL/6 mice. Data in Brief, 2015, 4, 32-33.	1.0	3
81	Prevention of Bone Destruction by Mechanical Loading Is Not Enhanced by the Brutonâ€™s Tyrosine Kinase Inhibitor CC-292 in Myeloma Bone Disease. International Journal of Molecular Sciences, 2021, 22, 3840.	4.1	3
82	A comparative staining technique to detect mineral oil contaminants from orthopedic implants. Journal of Biomedical Materials Research Part B, 2004, 70B, 130-138.	3.1	1
83	Hydrogels: One Step Creation of Multifunctional 3D Architectured Hydrogels Inducing Bone Regeneration (Adv. Mater. 10/2015). Advanced Materials, 2015, 27, 1800-1800.	21.0	1
84	OVERLOAD of joints and its role in osteoarthritis. Zeitschrift Fur Rheumatologie, 2017, 76, 1-4.	1.0	1
85	Smoking as a risk factor for spontaneous bone anchored hearing implant extrusion: A case report and review of literature. Otolaryngology Case Reports, 2020, 14, 100140.	0.1	1
86	Registered Micro-Computed Tomography Data as a Four-Dimensional Imaging Biomarker of Bone Formation and Resorption. Biomarkers in Disease, 2017, , 557-586.	0.1	1
87	GLOBAL AND SITE-SPECIFIC ADAPTATION OF CANCELLOUS BONE TO IN VIVO LOADING. Journal of Biomechanics, 2012, 45, S97.	2.1	0
88	Multi-Method 3D Characterization of Different Tissue Types in Healing Bone. Microscopy and Microanalysis, 2019, 25, 358-359.	0.4	0
89	Transcriptional profiling of cortical bone after mechanical loading in the MOPC315.BM myeloma bone disease model. Clinical Lymphoma, Myeloma and Leukemia, 2019, 19, e37-e38.	0.4	0
90	Registered Micro-Computed Tomography Data as a Four-Dimensional Imaging Biomarker of Bone Formation and Resorption. Exposure and Health, 2015, , 1-30.	4.9	0

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91	Mechanical Loading Shows Anti-Myeloma Effects While Rescuing Bone Loss with Net Bone Formation in a Myeloma Bone Disease Murine Model. Blood, 2018, 132, 3164-3164.	1.4	0
92	Bone strength and composition in spacefaring rodents: systematic review and meta-analysis. Npj Microgravity, 2022, 8, 10.	3.7	0