Sarah Gullbrand

List of Publications by Year
in descending order

165 papers	11,803 citations	34105 52 h-index	32842 100 g-index
171 all docs	171 docs citations	171 times ranked	11154 citing authors

#	Article	IF	Citations
1	Functional Tissue Engineering of Articular Cartilage Through Dynamic Loading of Chondrocyte-Seeded Agarose Gels. Journal of Biomechanical Engineering, 2000, 122, 252-260.	1.3	836
2	The potential to improve cell infiltration in composite fiber-aligned electrospun scaffolds by the selective removal of sacrificial fibers. Biomaterials, 2008, 29, 2348-2358.	11.4	557
3	Hydrogel design for cartilage tissue engineering: A case study with hyaluronic acid. Biomaterials, 2011, 32, 8771-8782.	11.4	443
4	Engineering controllable anisotropy in electrospun biodegradable nanofibrous scaffolds for musculoskeletal tissue engineering. Journal of Biomechanics, 2007, 40, 1686-1693.	2.1	355
5	Hydrogels that mimic developmentally relevant matrix and N-cadherin interactions enhance MSC chondrogenesis. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 10117-10122.	7.1	344
6	Enhanced MSC chondrogenesis following delivery of TGF-Î²3 from alginate microspheres within hyaluronic acid hydrogels in vitro and in vivo. Biomaterials, 2011, 32, 6425-6434.	11.4	327
7	Nanofibrous biologic laminates replicate the form and function of the annulus fibrosus. Nature Materials, 2009, 8, 986-992.	27.5	300
8	Local nascent protein deposition and remodelling guide mesenchymal stromal cell mechanosensing and fate in three-dimensional hydrogels. Nature Materials, 2019, 18, 883-891.	27.5	273
9	The influence of hyaluronic acid hydrogel crosslinking density and macromolecular diffusivity on human MSC chondrogenesis and hypertrophy. Biomaterials, 2013, 34, 413-421.	11.4	265
10	N-cadherin adhesive interactions modulate matrix mechanosensing and fate commitment of mesenchymal stem cells. Nature Materials, 2016, 15, 1297-1306.	27.5	262
11	Cytoskeletal to Nuclear Strain Transfer Regulates YAP Signaling in Mesenchymal Stem Cells. Biophysical Journal, 2015, 108, 2783-2793.	0.5	242
12	Mechanical design criteria for intervertebral disc tissue engineering. Journal of Biomechanics, 2010, 43, 1017-1030.	2.1	216
13	Mechanics of oriented electrospun nanofibrous scaffolds for annulus fibrosus tissue engineering. Journal of Orthopaedic Research, 2007, 25, 1018-1028.	2.3	215
14	Differential Maturation and Structureâ€“Function Relationships in Mesenchymal Stem Cell- and Chondrocyte-Seeded Hydrogels. Tissue Engineering - Part A, 2009, 15, 1041-1052.	3.1	196
15	Engineering on the Straight and Narrow: The Mechanics of Nanofibrous Assemblies for Fiber-Reinforced Tissue Regeneration. Tissue Engineering - Part B: Reviews, 2009, 15, 171-193.	4.8	188
16	Matching material and cellular timescales maximizes cell spreading on viscoelastic substrates. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E2686-E2695.	7.1	183
17	Long-term dynamic loading improves the mechanical properties of chondrogenic mesenchymal stem cell-laden hydrogel. , 2010, 19, 72-85.		182
18	Stiffening hydrogels for investigating the dynamics of hepatic stellate cell mechanotransduction during myofibroblast activation. Scientific Reports, 2016, 6, 21387.	3.3	176

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19	High mesenchymal stem cell seeding densities in hyaluronic acid hydrogels produce engineered cartilage with native tissue properties. Acta Biomaterialia, 2012, 8, 3027-3034.	8.3	173
20	Transient Exposure to Transforming Growth Factor Beta 3 Under Serum-Free Conditions Enhances the Biomechanical and Biochemical Maturation of Tissue-Engineered Cartilage. Tissue Engineering - Part A, 2008, 14, 1821-1834.	3.1	168
21	To Serve and Protect: Hydrogels to Improve Stem Cell-Based Therapies. Cell Stem Cell, 2016, 18, 13-15.	11.1	158
22	Mechanics and mechanobiology of mesenchymal stem cell-based engineered cartilage. Journal of Biomechanics, 2010, 43, 128-136.	2.1	154
23	Combinatorial hydrogels with biochemical gradients for screening 3D cellular microenvironments. Nature Communications, 2018, 9, 614.	12.8	150
24	Biophysical Regulation of Chromatin Architecture Instills a Mechanical Memory in Mesenchymal Stem Cells. Scientific Reports, 2015, 5, 16895.	3.3	148
25	Sacrificial nanofibrous composites provide instruction without impediment and enable functional tissue formation. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14176-14181.	7.1	145
26	Differentiation alters stem cell nuclear architecture, mechanics, and mechano-sensitivity. ELife, 2016, 5, .	6.0	138
27	Engineered Disc-Like Angle-Ply Structures for Intervertebral Disc Replacement. Spine, 2010, 35, 867-873.	2.0	127
28	Dynamic Tensile Loading Improves the Functional Properties of Mesenchymal Stem Cell-Laden Nanofiber-Based Fibrocartilage. Tissue Engineering - Part A, 2011, 17, 1445-1455.	3.1	109
29	Bioactive factors for cartilage repair and regeneration: Improving delivery, retention, and activity. Acta Biomaterialia, 2019, 93, 222-238.	8.3	101
30	Translation of an engineered nanofibrous disc-like angle-ply structure for intervertebral disc replacement in a small animal model. Acta Biomaterialia, 2014, 10, 2473-2481.	8.3	100
31	Programmed biomolecule delivery to enable and direct cell migration for connective tissue repair. Nature Communications, 2017, 8, 1780.	12.8	96
32	Cell migration: implications for repair and regeneration in joint disease. Nature Reviews Rheumatology, 2019, 15, 167-179.	8.0	94
33	Regional multilineage differentiation potential of meniscal fibrochondrocytes: Implications for meniscus repair. Anatomical Record, 2007, 290, 48-58.	1.4	93
34	Emerging therapies for cartilage regeneration in currently excluded â€˜red kneeâ€™ populations. Npj Regenerative Medicine, 2019, 4, 12.	5.2	88
35	Microstructural heterogeneity directs micromechanics and mechanobiology in native and engineered fibrocartilage. Nature Materials, 2016, 15, 477-484.	27.5	84
36	Targeting cartilage EGFR pathway for osteoarthritis treatment. Science Translational Medicine, 2021, 13, .	12.4	83

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37	Long-term mechanical function and integration of an implanted tissue-engineered intervertebral disc. Science Translational Medicine, 2018, 10, .	12.4	82
38	Transient exposure to TGF-3 improves the functional chondrogenesis of MSC-laden hyaluronic acid hydrogels. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 11, 92-101.	3.1	80
39	Fabrication and Modeling of Dynamic Multipolymer Nanofibrous Scaffolds. Journal of Biomechanical Engineering, 2009, 131, 101012.	1.3	78
40	Micromechanical anisotropy and heterogeneity of the meniscus extracellular matrix. Acta Biomaterialia, 2017, 54, 356-366.	8.3	76
41	Advancing cell therapies for intervertebral disc regeneration from the lab to the clinic: Recommendations of the ORS spine section. JOR Spine, 2018, 1, e1036.	3.2	74
42	A Systematic Review and Guide to Mechanical Testing for Articular Cartilage Tissue Engineering. Tissue Engineering - Part C: Methods, 2019, 25, 593-608.	2.1	74
43	Cartilage Repair and Subchondral Bone Remodeling in Response to Focal Lesions in a Mini-Pig Model: Implications for Tissue Engineering. Tissue Engineering - Part A, 2015, 21, 850-860.	3.1	72
44	IL-1ra delivered from poly(lactic-co-glycolic acid) microspheres attenuates IL-1beta mediated degradation of nucleus pulposus in vitro. Arthritis Research and Therapy, 2012, 14, R179.	3.5	69
45	MXene-infused bioelectronic interfaces for multiscale electrophysiology and stimulation. Science Translational Medicine, 2021, 13, eabf8629.	12.4	68
46	Repair of dense connective tissues via biomaterial-mediated matrix reprogramming of the wound interface. Biomaterials, 2015, 39, 85-94.	11.4	67
47	Cell therapy for the degenerating intervertebral disc. Translational Research, 2017, 181, 49-58.	5.0	67
48	Decorin Regulates the Aggrecan Network Integrity and Biomechanical Functions of Cartilage Extracellular Matrix. ACS Nano, 2019, 13, 11320-11333.	14.6	67
49	Evaluation of the Complex Transcriptional Topography of Mesenchymal Stem Cell Chondrogenesis for Cartilage Tissue Engineering. Tissue Engineering - Part A, 2010, 16, 2699-2708.	3.1	65
50	Translation of an injectable triple-interpenetrating-network hydrogel for intervertebral disc regeneration in a goat model. Acta Biomaterialia, 2017, 60, 201-209.	8.3	65
51	Early changes in cartilage pericellular matrix micromechanobiology portend the onset of post-traumatic osteoarthritis. Acta Biomaterialia, 2020, 111, 267-278.	8.3	65
52	ISSLS Prize Winner: Integrating Theoretical and Experimental Methods for Functional Tissue Engineering of the Annulus Fibrosus. Spine, 2008, 33, 2691-2701.	2.0	64
53	Aberrant mechanosensing in injured intervertebral discs as a result of boundary-constraint disruption and residual-strain loss. Nature Biomedical Engineering, 2019, 3, 998-1008.	22.5	58
54	The Nuclear Option: Evidence Implicating the Cell Nucleus in Mechanotransduction. Journal of Biomechanical Engineering, 2017, 139, .	1.3	57

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55	Mechanically Activated Microcapsules for â€œOnâ€Demandâ€•Drug Delivery in Dynamically Loaded Musculoskeletal Tissues. Advanced Functional Materials, 2019, 29, 1807909.	14.9	57
56	Mechanically Induced Chromatin Condensation Requires Cellular Contractility in Mesenchymal Stem Cells. Biophysical Journal, 2016, 111, 864-874.	0.5	56
57	Nucleus pulposus cells synthesize a functional extracellular matrix and respond to inflammatory cytokine challenge following long-term agarose culture. , 2011, 22, 291-301.		56
58	Functional properties of bone marrow-derived MSC-based engineered cartilage are unstable with very long-term in vitro culture. Journal of Biomechanics, 2014, 47, 2173-2182.	2.1	55
59	A large animal model that recapitulates the spectrum of human intervertebral disc degeneration. Osteoarthritis and Cartilage, 2017, 25, 146-156.	1.3	54
60	Phenotypic stability, matrix elaboration and functional maturation of nucleus pulposus cells encapsulated in photocrosslinkable hyaluronic acid hydrogels. Acta Biomaterialia, 2015, 12, 21-29.	8.3	53
61	Cartilage Matrix Formation by Bovine Mesenchymal Stem Cells in Three-dimensional Culture Is Age-dependent. Clinical Orthopaedics and Related Research, 2011, 469, 2744-2753.	1.5	52
62	<sup />Thermosensitive Poly(N-vinylcaprolactam) Injectable Hydrogels for Cartilage Tissue Engineering. Tissue Engineering - Part A, 2017, 23, 935-945.	3.1	51
63	Dose and Timing of Nâ€Cadherin Mimetic Peptides Regulate MSC Chondrogenesis within Hydrogels. Advanced Healthcare Materials, 2018, 7, e1701199.	7.6	51
64	Intervertebral Disc Degeneration Is Associated With Aberrant Endplate Remodeling and Reduced Small Molecule Transport. Journal of Bone and Mineral Research, 2020, 35, 1572-1581.	2.8	51
65	ISSLS Prize Winner. Spine, 2015, 40, 1158-1164.	2.0	50
66	Engineering meniscus structure and function via multi-layered mesenchymal stem cell-seeded nanofibrous scaffolds. Journal of Biomechanics, 2015, 48, 1412-1419.	2.1	49
67	A Chemomechanical Model of Matrix and Nuclear Rigidity Regulation of Focal Adhesion Size. Biophysical Journal, 2015, 109, 1807-1817.	0.5	49
68	Development of a standardized histopathology scoring system for intervertebral disc degeneration in rat models: An initiative of the <scp>ORS</scp> spine section. JOR Spine, 2021, 4, e1150.	3.2	49
69	Metabolic Labeling to Probe the Spatiotemporal Accumulation of Matrix at the Chondrocyteâ€“Hydrogel Interface. Advanced Functional Materials, 2020, 30, 1909802.	14.9	48
70	In Vitro Characterization of a Stem-Cell-Seeded Triple-Interpenetrating-Network Hydrogel for Functional Regeneration of the Nucleus Pulposus. Tissue Engineering - Part A, 2014, 20, 1841-1849.	3.1	47
71	Extracellular vesicles mediate improved functional outcomes in engineered cartilage produced from MSC/chondrocyte cocultures. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1569-1578.	7.1	47
72	Fibrous Scaffolds with Varied Fiber Chemistry and Growth Factor Delivery Promote Repair in a Porcine Cartilage Defect Model. Tissue Engineering - Part A, 2015, 21, 2680-2690.	3.1	46

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73	Correlations between quantitative <i>T</i>2 and <i>T</i>1<i>Ï</i> MRI, mechanical properties and biochemical composition in a rabbit lumbar intervertebral disc degeneration model. Journal of Orthopaedic Research, 2016, 34, 1382-1388.	2.3	46
74	A radiopaque electrospun scaffold for engineering fibrous musculoskeletal tissues: Scaffold characterization and in vivo applications. Acta Biomaterialia, 2015, 26, 97-104.	8.3	45
75	From Repair to Regeneration: Biomaterials to Reprogram the Meniscus Wound Microenvironment. Annals of Biomedical Engineering, 2015, 43, 529-542.	2.5	44
76	Single-cell differences in matrix gene expression do not predict matrix deposition. Nature Communications, 2016, 7, 10865.	12.8	43
77	Crimped Nanofibrous Biomaterials Mimic Microstructure and Mechanics of Native Tissue and Alter Strain Transfer to Cells. ACS Biomaterials Science and Engineering, 2017, 3, 2869-2876.	5.2	41
78	Nanofibrous hyaluronic acid scaffolds delivering TGF-Î²3 and SDF-1Î± for articular cartilage repair in a large animal model. Acta Biomaterialia, 2021, 126, 170-182.	8.3	40
79	Donor Variation and Optimization of Human Mesenchymal Stem Cell Chondrogenesis in Hyaluronic Acid. Tissue Engineering - Part A, 2018, 24, 1693-1703.	3.1	39
80	Maximizing cartilage formation and integration via a trajectory-based tissue engineering approach. Biomaterials, 2014, 35, 2140-2148.	11.4	38
81	Physiology and Engineering of the Graded Interfaces of Musculoskeletal Junctions. Annual Review of Biomedical Engineering, 2018, 20, 403-429.	12.3	38
82	Decorin regulates cartilage pericellular matrix micromechanobiology. Matrix Biology, 2021, 96, 1-17.	3.6	37
83	Nuclear softening expedites interstitial cell migration in fibrous networks and dense connective tissues. Science Advances, 2020, 6, eaax5083.	10.3	36
84	Effects of Mesenchymal Stem Cell and Growth Factor Delivery on Cartilage Repair in a Mini-Pig Model. Cartilage, 2016, 7, 174-184.	2.7	35
85	Hypoxic Preconditioning Enhances Bone Marrowâ€"Derived Mesenchymal Stem Cell Survival in a Low Oxygen and Nutrient-Limited 3D Microenvironment. Cartilage, 2021, 12, 512-525.	2.7	35
86	High fidelity visualization of cell-to-cell variation and temporal dynamics in nascent extracellular matrix formation. Scientific Reports, 2016, 6, 38852.	3.3	34
87	Fabrication of MSC-laden composites of hyaluronic acid hydrogels reinforced with MEW scaffolds for cartilage repair. Biofabrication, 2022, 14, 014106.	7.1	34
88	Low rate loading-induced convection enhances net transport into the intervertebral disc inÂvivo. Spine Journal, 2015, 15, 1028-1033.	1.3	33
89	Biphasic Finite Element Modeling Reconciles Mechanical Properties of Tissue-Engineered Cartilage Constructs Across Testing Platforms. Tissue Engineering - Part A, 2017, 23, 663-674.	3.1	33
90	Fatigue loading of tendon results in collagen kinking and denaturation but does not change local tissue mechanics. Journal of Biomechanics, 2018, 71, 251-256.	2.1	33

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91	Influence of Fiber Stiffness on Meniscal Cell Migration into Dense Fibrous Networks. Advanced Healthcare Materials, 2020, 9, e1901228.	7.6	33
92	Nuclear envelope wrinkling predicts mesenchymal progenitor cell mechano-response in 2D and 3D microenvironments. Biomaterials, 2021, 270, 120662.	11.4	33
93	Maturation State and Matrix Microstructure Regulate Interstitial Cell Migration in Dense Connective Tissues. Scientific Reports, 2018, 8, 3295.	3.3	31
94	Mechano-adaptation of the stem cell nucleus. Nucleus, 2018, 9, 9-19.	2.2	31
95	Multiscale and multimodal structureâ€“function analysis of intervertebral disc degeneration in a rabbit model. Osteoarthritis and Cartilage, 2019, 27, 1860-1869.	1.3	31
96	Combined Hydrogel and Mesenchymal Stem Cell Therapy for Moderate-Severity Disc Degeneration in Goats. Tissue Engineering - Part A, 2021, 27, 117-128.	3.1	31
97	Age-Dependent Subchondral Bone Remodeling and Cartilage Repair in a Minipig Defect Model. Tissue Engineering - Part C: Methods, 2017, 23, 745-753.	2.1	30
98	ACVR1^{R206H} FOP mutation alters mechanosensing and tissue stiffness during heterotopic ossification. Molecular Biology of the Cell, 2019, 30, 17-29.	2.1	30
99	In vivo performance of an acellular discâ€like angle ply structure (DAPS) for total disc replacement in a small animal model. Journal of Orthopaedic Research, 2017, 35, 23-31.	2.3	29
100	Elevated BMP and Mechanical Signaling Through YAP1/RhoA Poises FOP Mesenchymal Progenitors for Osteogenesis. Journal of Bone and Mineral Research, 2019, 34, 1894-1909.	2.8	29
101	Inflammatory cytokine and catabolic enzyme expression in a goat model of intervertebral disc degeneration. Journal of Orthopaedic Research, 2020, 38, 2521-2531.	2.3	28
102	Expansion of mesenchymal stem cells on electrospun scaffolds maintains stemness, mechanoâ€responsivity, and differentiation potential. Journal of Orthopaedic Research, 2018, 36, 808-815.	2.3	27
103	Population average T2 MRI maps reveal quantitative regional transformations in the degenerating rabbit intervertebral disc that vary by lumbar level. Journal of Orthopaedic Research, 2015, 33, 140-148.	2.3	26
104	Mechanical function near defects in an aligned nanofiber composite is preserved by inclusion of disorganized layers: Insight into meniscus structure and function. Acta Biomaterialia, 2017, 56, 102-109.	8.3	26
105	Towards the scale up of tissue engineered intervertebral discs for clinical application. Acta Biomaterialia, 2018, 70, 154-164.	8.3	26
106	Sprifermin treatment enhances cartilage integration in an in vitro repair model. Journal of Orthopaedic Research, 2018, 36, 2648-2656.	2.3	26
107	Enhanced nutrient transport improves the depth-dependent properties of tri-layered engineered cartilage constructs with zonal co-culture of chondrocytes and MSCs. Acta Biomaterialia, 2017, 58, 1-11.	8.3	24
108	Quantitative MRI correlates with histological grade in a percutaneous needle injury mouse model of disc degeneration. Journal of Orthopaedic Research, 2018, 36, 2771-2779.	2.3	24

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109	Time-dependent functional maturation of scaffold-free cartilage tissue analogs. Journal of Biomechanics, 2014, 47, 2137-2142.	2.1	23
110	Anatomic Mesenchymal Stem Cell-Based Engineered Cartilage Constructs for Biologic Total Joint Replacement. Tissue Engineering - Part A, 2016, 22, 386-395.	3.1	23
111	Large Animal Models of Meniscus Repair and Regeneration: A Systematic Review of the State of the Field. Tissue Engineering - Part C: Methods, 2017, 23, 661-672.	2.1	23
112	Sacrificial Fibers Improve Matrix Distribution and Micromechanical Properties in a Tissue-Engineered Intervertebral Disc. Acta Biomaterialia, 2020, 111, 232-241.	8.3	22
113	Single Cell Imaging to Probe Mesenchymal Stem Cell N-Cadherin Mediated Signaling within Hydrogels. Annals of Biomedical Engineering, 2016, 44, 1921-1930.	2.5	21
114	Promise, progress, and problems in whole disc tissue engineering. JOR Spine, 2018, 1, e1015.	3.2	21
115	Development of a decellularized meniscus matrix-based nanofibrous scaffold for meniscus tissue engineering. Acta Biomaterialia, 2021, 128, 175-185.	8.3	20
116	Simultaneous Oneâ€Pot Interpenetrating Network Formation to Expand 3D Processing Capabilities. Advanced Materials, 2022, 34, e2202261.	21.0	20
117	Drug-induced changes to the vertebral endplate vasculature affect transport into the intervertebral disc in vivo. Journal of Orthopaedic Research, 2014, 32, 1694-1700.	2.3	19
118	Impact of guidance documents on translational large animal studies of cartilage repair. Science Translational Medicine, 2015, 7, 310re9.	12.4	19
119	Comparison of Fixation Techniques of 3D-Woven Poly(Ïµ-Caprolactone) Scaffolds for Cartilage Repair in a Weightbearing Porcine Large Animal Model. Cartilage, 2018, 9, 428-437.	2.7	19
120	Magnetoâ€Driven Gradients of Diamagnetic Objects for Engineering Complex Tissues. Advanced Materials, 2020, 32, e2005030.	21.0	19
121	Putting the Pieces in Place: Mobilizing Cellular Players to Improve Annulus Fibrosus Repair. Tissue Engineering - Part B: Reviews, 2021, 27, 295-312.	4.8	19
122	Transection of the medial meniscus anterior horn results in cartilage degeneration and meniscus remodeling in a large animal model. Journal of Orthopaedic Research, 2020, 38, 2696-2708.	2.3	19
123	A high throughput mechanical screening device for cartilage tissue engineering. Journal of Biomechanics, 2014, 47, 2130-2136.	2.1	18
124	Intervertebral disc development and disease-related genetic polymorphisms. Genes and Diseases, 2016, 3, 171-177.	3.4	18
125	Chondrocyte and mesenchymal stem cell derived engineered cartilage exhibits differential sensitivity to proâ€inflammatory cytokines. Journal of Orthopaedic Research, 2018, 36, 2901-2910.	2.3	18
126	Fabrication, maturation, and implantation of composite tissue-engineered total discs formed from native and mesenchymal stem cell combinations. Acta Biomaterialia, 2020, 114, 53-62.	8.3	17

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127	Stabilization of Damaged Articular Cartilage with Hydrogelâ€Mediated Reinforcement and Sealing. Advanced Healthcare Materials, 2021, 10, 2100315.	7.6	17
128	Biocompatibility and bioactivity of an FGF-loaded microsphere-based bilayer delivery system. Acta Biomaterialia, 2020, 111, 341-348.	8.3	16
129	â€œLooping Inâ€•Mechanics: Mechanobiologic Regulation of the Nucleus and the Epigenome. Advanced Healthcare Materials, 2020, 9, e2000030.	7.6	16
130	Near-Infrared Spectroscopy Predicts Compositional and Mechanical Properties of Hyaluronic Acid-Based Engineered Cartilage Constructs. Tissue Engineering - Part A, 2018, 24, 106-116.	3.1	15
131	Mechano-activated biomolecule release in regenerating load-bearing tissue microenvironments. Biomaterials, 2021, 265, 120255.	11.4	15
132	Impacts of maturation on the micromechanics of the meniscus extracellular matrix. Journal of Biomechanics, 2018, 72, 252-257.	2.1	14
133	The critical role of Hedgehog-responsive mesenchymal progenitors in meniscus development and injury repair. ELife, 2021, 10, .	6.0	14
134	Metabolic labeling of secreted matrix to investigate cellâ€“material interactions in tissue engineering and mechanobiology. Nature Protocols, 2022, 17, 618-648.	12.0	14
135	In vivo retention and bioactivity of IL-1ra microspheres in the rat intervertebral disc: a preliminary investigation. Journal of Experimental Orthopaedics, 2014, 1, 15.	1.8	13
136	<sup />Optimization of Preculture Conditions to Maximize the <i>In Vivo</i> Performance of Cell-Seeded Engineered Intervertebral Discs. Tissue Engineering - Part A, 2017, 23, 923-934.	3.1	13
137	Cell morphology and mechanosensing can be decoupled in fibrous microenvironments and identified using artificial neural networks. Scientific Reports, 2021, 11, 5950.	3.3	13
138	Structure, function, and defect tolerance with maturation of the radial tie fiber network in the knee meniscus. Journal of Orthopaedic Research, 2020, 38, 2709-2720.	2.3	12
139	Development of a standardized histopathology scoring system for intervertebral disc degeneration and regeneration in rabbit modelsâ€An initiative of the <scp>ORS</scp>spine section. JOR Spine, 2021, 4, e1147.	3.2	11
140	Intrinsic and growthâ€mediated cell and matrix specialization during murine meniscus tissue assembly. FASEB Journal, 2021, 35, e21779.	0.5	11
141	Publication trends in spine research from 2007 to 2016: Comparison of the Orthopaedic Research Society Spine Section and the International Society for the Study of the Lumbar Spine. JOR Spine, 2018, 1, e1006.	3.2	10
142	A challenging playing field: Identifying the endogenous impediments to annulus fibrosus repair. JOR Spine, 2021, 4, e1133.	3.2	10
143	Type V collagen regulates the structure and biomechanics of TMJ condylar cartilage: A fibrous-hyaline hybrid. Matrix Biology, 2021, 102, 1-19.	3.6	10
144	A Wearable Magnet-Based System to Assess Activity and Joint Flexion in Humans and Large Animals. Annals of Biomedical Engineering, 2018, 46, 2069-2078.	2.5	9

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145	Degeneration alters structureâ€function relationships at multiple lengthâ€scales and across interfaces in human intervertebral discs. Journal of Anatomy, 2021, 238, 986-998.	1.5	9
146	Development of a Large Animal Model of Osteochondritis Dissecans of the Knee. Orthopaedic Journal of Sports Medicine, 2015, 3, 232596711557001.	1.7	8
147	Measuring clinically relevant knee motion with a self-calibrated wearable sensor. Journal of Biomechanics, 2019, 89, 105-109.	2.1	7
148	Role of dexamethasone in the longâ€term functional maturation of MSCâ€laden hyaluronic acid hydrogels for cartilage tissue engineering. Journal of Orthopaedic Research, 2018, 36, 1717-1727.	2.3	6
149	Resorbable Pins to Enhance Scaffold Retention in a Porcine Chondral Defect Model. Cartilage, 2021, 13, 1676S-1687S.	2.7	6
150	Evaluation of Autologous Protein Solution Injection for Treatment of Superficial Digital Flexor Tendonitis in an Equine Model. Frontiers in Veterinary Science, 2021, 8, 697551.	2.2	5
151	Anisotropic Rodâ€Shaped Particles Influence Injectable Granular Hydrogel Properties and Cell Invasion (Adv. Mater. 12/2022). Advanced Materials, 2022, 34, .	21.0	5
152	A common language for evaluating disc degeneration and regeneration: A <i>JOR Spine</i>/ORS Spine Section initiative. JOR Spine, 2019, 2, e1056.	3.2	4
153	Six-Month Outcomes of Clinically Relevant Meniscal Injury in a Large-Animal Model. Orthopaedic Journal of Sports Medicine, 2021, 9, 232596712110354.	1.7	4
154	Restoration of physiologic loading modulates engineered intervertebral disc structure and function in an in vivo model. JOR Spine, 2020, 3, e1086.	3.2	2
155	A perspective on the <scp><i>ORS Spine Section</i></scp> initiative to develop a multiâ€species <scp><i>JOR Spine</i></scp> histopathology series. JOR Spine, 2021, 4, e1165.	3.2	2
156	Cationic gadolinium chelate for magnetic resonance imaging of cartilaginous defects. Contrast Media and Molecular Imaging, 2016, 11, 229-235.	0.8	1
157	The porcine accessory carpal bone as a model for biologic joint replacement for trapeziometacarpal osteoarthritis. Acta Biomaterialia, 2021, 129, 159-168.	8.3	1
158	Delivery of Active FGF-2 From Mechanically-Stable Biological Nanofibers Accelerates Cell Ingress Into Multifiber Composites. , 2011, , .		1
159	ISSLS Prize in Bioengineering Science 2022: low rate cyclic loading as a therapeutic strategy for intervertebral disc regeneration. European Spine Journal, 2022, 31, 1088-1098.	2.2	1
160	Level dependent alterations in human facet cartilage mechanics and bone morphometry with spine degeneration. Journal of Orthopaedic Research, 2023, 41, 674-683.	2.3	1
161	Dynamic loading and altered contractility modulate nuclear deformation and nesprin expression. , 2012, , .		0
162	2061 Acellular hyaluronic acid scaffold with growth factor delivery for cartilage repair in a large animal model. Journal of Clinical and Translational Science, 2018, 2, 3-3.	0.6	0

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163	Engineering Meniscus Form and Function via Multi-Layer Cell-Seeded Nanofibrous Scaffolds With Circumferentially Aligned Fibers. , 2013, , .		0
164	Trajectory-Based Tissue Engineering for Cartilage Repair: Correlation Between Maturation Rate and Integration Capacity. , 2013, , .		0
165	Engineering of Fiber-Reinforced Tissues with Anisotropic Biodegradable Nanofibrous Scaffolds. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0