Robert L Mauck

List of Publications by Citations

242 papers	14,790 citations	64 h-index	114 g-index
306 ext. papers	16,770 ext. citations	6.7 avg, IF	6.83 L-index

#	Paper	IF	Citations
242	Functional tissue engineering of articular cartilage through dynamic loading of chondrocyte-seeded agarose gels. *Journal of Biomechanical Engineering*, **2000**, 122, 252-60	2.1	738
241	The potential to improve cell infiltration in composite fiber-aligned electrospun scaffolds by the selective removal of sacrificial fibers. *Biomaterials*, **2008**, 29, 2348-58	15.6	494
240	Fabrication and characterization of six electrospun poly(alpha-hydroxy ester)-based fibrous scaffolds for tissue engineering applications. *Acta Biomaterialia*, **2006**, 2, 377-85	10.8	415
239	Hydrogel design for cartilage tissue engineering: a case study with hyaluronic acid. *Biomaterials*, **2011**, 32, 8771-82	15.6	376
238	Engineering controllable anisotropy in electrospun biodegradable nanofibrous scaffolds for musculoskeletal tissue engineering. *Journal of Biomechanics*, **2007**, 40, 1686-1693	2.9	314
237	The effect of nanofiber alignment on the maturation of engineered meniscus constructs. *Biomaterials*, **2007**, 28, 1967-77	15.6	302
236	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, 10117-22	11.5	282
235	Synergistic action of growth factors and dynamic loading for articular cartilage tissue engineering. *Tissue Engineering*, **2003**, 9, 597-611		281
234	Enhanced MSC chondrogenesis following delivery of TGF-β from alginate microspheres within hyaluronic acid hydrogels in vitro and in vivo. *Biomaterials*, **2011**, 32, 6425-34	15.6	276
233	Nanofibrous biologic laminates replicate the form and function of the annulus fibrosus. *Nature Materials*, **2009**, 8, 986-92	27	270
232	Tissue engineering for articular cartilage repair--the state of the art. *European Cells and Materials*, **2013**, 25, 248-67	4.3	258
231	Influence of seeding density and dynamic deformational loading on the developing structure/function relationships of chondrocyte-seeded agarose hydrogels. *Annals of Biomedical Engineering*, **2002**, 30, 1046-56	4.7	242
230	Cartilage tissue engineering: its potential and uses. *Current Opinion in Rheumatology*, **2006**, 18, 64-73	5.3	221
229	The influence of hyaluronic acid hydrogel crosslinking density and macromolecular diffusivity on human MSC chondrogenesis and hypertrophy. *Biomaterials*, **2013**, 34, 413-21	15.6	210
228	A paradigm for functional tissue engineering of articular cartilage via applied physiologic deformational loading. *Annals of Biomedical Engineering*, **2004**, 32, 35-49	4.7	204
227	Mechanics of oriented electrospun nanofibrous scaffolds for annulus fibrosus tissue engineering. *Journal of Orthopaedic Research*, **2007**, 25, 1018-28	3.8	200
226	Coculture of human mesenchymal stem cells and articular chondrocytes reduces hypertrophy and enhances functional properties of engineered cartilage. *Tissue Engineering - Part A*, **2011**, 17, 1137-45	3.9	197

225	Material properties in unconfined compression of human nucleus pulposus, injectable hyaluronic acid-based hydrogels and tissue engineering scaffolds. *European Spine Journal*, **2007**, 16, 1892-8	2.7	197
224	N-cadherin adhesive interactions modulate matrix mechanosensing and fate commitment of mesenchymal stem cells. *Nature Materials*, **2016**, 15, 1297-1306	27	193
223	Tissue engineering and regenerative medicine: recent innovations and the transition to translation. *Tissue Engineering - Part B: Reviews*, **2013**, 19, 1-13	7.9	181
222	Cytoskeletal to Nuclear Strain Transfer Regulates YAP Signaling in Mesenchymal Stem Cells. *Biophysical Journal*, **2015**, 108, 2783-93	2.9	180
221	The influence of degradation characteristics of hyaluronic acid hydrogels on in vitro neocartilage formation by mesenchymal stem cells. *Biomaterials*, **2009**, 30, 4287-96	15.6	180
220	Differential maturation and structure-function relationships in mesenchymal stem cell- and chondrocyte-seeded hydrogels. *Tissue Engineering - Part A*, **2009**, 15, 1041-52	3.9	178
219	Anatomically shaped osteochondral constructs for articular cartilage repair. *Journal of Biomechanics*, **2003**, 36, 1853-64	2.9	178
218	Local nascent protein deposition and remodelling guide mesenchymal stromal cell mechanosensing and fate in three-dimensional hydrogels. *Nature Materials*, **2019**, 18, 883-891	27	171
217	Mechanical design criteria for intervertebral disc tissue engineering. *Journal of Biomechanics*, **2010**, 43, 1017-30	2.9	168
216	Engineering on the straight and narrow: the mechanics of nanofibrous assemblies for fiber-reinforced tissue regeneration. *Tissue Engineering - Part B: Reviews*, **2009**, 15, 171-93	7.9	166
215	Modeling of neutral solute transport in a dynamically loaded porous permeable gel: implications for articular cartilage biosynthesis and tissue engineering. *Journal of Biomechanical Engineering*, **2003**, 125, 602-14	2.1	164
214	Long-term dynamic loading improves the mechanical properties of chondrogenic mesenchymal stem cell-laden hydrogel. *European Cells and Materials*, **2010**, 19, 72-85	4.3	156
213	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, 1821-34	3.9	154
212	High mesenchymal stem cell seeding densities in hyaluronic acid hydrogels produce engineered cartilage with native tissue properties. *Acta Biomaterialia*, **2012**, 8, 3027-34	10.8	149
211	Mechanics and mechanobiology of mesenchymal stem cell-based engineered cartilage. *Journal of Biomechanics*, **2010**, 43, 128-36	2.9	135
210	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, 14176-81	11.5	132
209	Stiffening hydrogels for investigating the dynamics of hepatic stellate cell mechanotransduction during myofibroblast activation. *Scientific Reports*, **2016**, 6, 21387	4.9	125
208	Combinatorial hydrogels with biochemical gradients for screening 3D cellular microenvironments. *Nature Communications*, **2018**, 9, 614	17.4	121

207	A layered agarose approach to fabricate depth-dependent inhomogeneity in chondrocyte-seeded constructs. *Journal of Orthopaedic Research*, **2005**, 23, 134-41	3.8	121
206	To Serve and Protect: Hydrogels to Improve Stem Cell-Based Therapies. *Cell Stem Cell*, **2016**, 18, 13-5	18	119
205	Transient exposure to transforming growth factor beta 3 improves the mechanical properties of mesenchymal stem cell-laden cartilage constructs in a density-dependent manner. *Tissue Engineering - Part A*, **2009**, 15, 3461-72	3.9	115
204	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	11.5	113
203	Biophysical Regulation of Chromatin Architecture Instills a Mechanical Memory in Mesenchymal Stem Cells. *Scientific Reports*, **2015**, 5, 16895	4.9	107
202	Engineered disc-like angle-ply structures for intervertebral disc replacement. *Spine*, **2010**, 35, 867-73	3.3	107
201	Dynamic compressive loading enhances cartilage matrix synthesis and distribution and suppresses hypertrophy in hMSC-laden hyaluronic acid hydrogels. *Tissue Engineering - Part A*, **2012**, 18, 715-24	3.9	104
200	An anisotropic nanofiber/microsphere composite with controlled release of biomolecules for fibrous tissue engineering. *Biomaterials*, **2010**, 31, 4113-20	15.6	103
199	Acellular biomaterials: an evolving alternative to cell-based therapies. *Science Translational Medicine*, **2013**, 5, 176ps4	17.5	99
198	Differential behavior of auricular and articular chondrocytes in hyaluronic acid hydrogels. *Tissue Engineering - Part A*, **2008**, 14, 1121-31	3.9	96
197	Mitogen-activated protein kinase signaling in bovine articular chondrocytes in response to fluid flow does not require calcium mobilization. *Journal of Biomechanics*, **2000**, 33, 73-80	2.9	95
196	Dynamic culture enhances stem cell infiltration and modulates extracellular matrix production on aligned electrospun nanofibrous scaffolds. *Acta Biomaterialia*, **2011**, 7, 485-91	10.8	90
195	New directions in nanofibrous scaffolds for soft tissue engineering and regeneration. *Expert Review of Medical Devices*, **2009**, 6, 515-32	3.5	90
194	Dynamic tensile loading improves the functional properties of mesenchymal stem cell-laden nanofiber-based fibrocartilage. *Tissue Engineering - Part A*, **2011**, 17, 1445-55	3.9	87
193	Electrospun Nanofibrous Scaffolds: Production, Characterization, and Applications for Tissue Engineering and Drug Delivery. *Journal of Biomedical Nanotechnology*, **2005**, 1, 259-275	4	86
192	Differentiation alters stem cell nuclear architecture, mechanics, and mechano-sensitivity. *ELife*, **2016**, 5,	8.9	86
191	The influence of an aligned nanofibrous topography on human mesenchymal stem cell fibrochondrogenesis. *Biomaterials*, **2010**, 31, 6190-200	15.6	83
190	Regional multilineage differentiation potential of meniscal fibrochondrocytes: implications for meniscus repair. *Anatomical Record*, **2007**, 290, 48-58	2.1	83

189	Pathogenesis and prevention of posttraumatic osteoarthritis after intra-articular fracture. *Journal of the American Academy of Orthopaedic Surgeons, The*, **2014**, 22, 20-8	4.5	81
188	Translation of an engineered nanofibrous disc-like angle-ply structure for intervertebral disc replacement in a small animal model. *Acta Biomaterialia*, **2014**, 10, 2473-81	10.8	81
187	Mechano-topographic modulation of stem cell nuclear shape on nanofibrous scaffolds. *Acta Biomaterialia*, **2011**, 7, 57-66	10.8	76
186	Programmed biomolecule delivery to enable and direct cell migration for connective tissue repair. *Nature Communications*, **2017**, 8, 1780	17.4	69
185	Fabrication and modeling of dynamic multipolymer nanofibrous scaffolds. *Journal of Biomechanical Engineering*, **2009**, 131, 101012	2.1	68
184	Organized nanofibrous scaffolds that mimic the macroscopic and microscopic architecture of the knee meniscus. *Acta Biomaterialia*, **2013**, 9, 4496-504	10.8	67
183	Transient exposure to TGF-β improves the functional chondrogenesis of MSC-laden hyaluronic acid hydrogels. *Journal of the Mechanical Behavior of Biomedical Materials*, **2012**, 11, 92-101	4.1	66
182	Chondrocyte translocation response to direct current electric fields. *Journal of Biomechanical Engineering*, **2000**, 122, 261-7	2.1	65
181	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, 850-60	3.9	64
180	Osteocyte viability and regulation of osteoblast function in a 3D trabecular bone explant under dynamic hydrostatic pressure. *Journal of Bone and Mineral Research*, **2004**, 19, 1403-10	6.3	64
179	Bioactive factors for cartilage repair and regeneration: Improving delivery, retention, and activity. *Acta Biomaterialia*, **2019**, 93, 222-238	10.8	64
178	Fiber-aligned polymer scaffolds for rotator cuff repair in a rat model. *Journal of Shoulder and Elbow Surgery*, **2012**, 21, 245-50	4.3	63
177	Growth factor supplementation improves native and engineered meniscus repair in vitro. *Acta Biomaterialia*, **2012**, 8, 3687-94	10.8	62
176	Homologous structure-function relationships between native fibrocartilage and tissue engineered from MSC-seeded nanofibrous scaffolds. *Biomaterials*, **2011**, 32, 461-8	15.6	62
175	Microstructural heterogeneity directs micromechanics and mechanobiology in native and engineered fibrocartilage. *Nature Materials*, **2016**, 15, 477-84	27	61
174	Functional tissue engineering of chondral and osteochondral constructs. *Biorheology*, **2004**, 41, 577-90	1.7	61
173	ISSLS prize winner: integrating theoretical and experimental methods for functional tissue engineering of the annulus fibrosus. *Spine*, **2008**, 33, 2691-701	3.3	59
172	High-throughput screening for modulators of mesenchymal stem cell chondrogenesis. *Annals of Biomedical Engineering*, **2008**, 36, 1909-21	4.7	59

171	The detrimental effects of systemic Ibuprofen delivery on tendon healing are time-dependent. *Clinical Orthopaedics and Related Research*, **2014**, 472, 2433-9	2.2	58
170	Electrospinning of photocrosslinked and degradable fibrous scaffolds. *Journal of Biomedical Materials Research - Part A*, **2008**, 87, 1034-43	5.4	56
169	Evaluation of the complex transcriptional topography of mesenchymal stem cell chondrogenesis for cartilage tissue engineering. *Tissue Engineering - Part A*, **2010**, 16, 2699-708	3.9	54
168	Cartilage interstitial fluid load support in unconfined compression following enzymatic digestion. *Journal of Biomechanical Engineering*, **2004**, 126, 779-86	2.1	54
167	Repair of dense connective tissues via biomaterial-mediated matrix reprogramming of the wound interface. *Biomaterials*, **2015**, 39, 85-94	15.6	53
166	IL-1ra delivered from poly(lactic-co-glycolic acid) microspheres attenuates IL-1□mediated degradation of nucleus pulposus in vitro. *Arthritis Research and Therapy*, **2012**, 14, R179	5.7	53
165	Fiber angle and aspect ratio influence the shear mechanics of oriented electrospun nanofibrous scaffolds. *Journal of the Mechanical Behavior of Biomedical Materials*, **2011**, 4, 1627-36	4.1	53
164	Macro- to microscale strain transfer in fibrous tissues is heterogeneous and tissue-specific. *Biophysical Journal*, **2013**, 105, 807-17	2.9	52
163	Micromechanical anisotropy and heterogeneity of the meniscus extracellular matrix. *Acta Biomaterialia*, **2017**, 54, 356-366	10.8	50
162	Functional properties of bone marrow-derived MSC-based engineered cartilage are unstable with very long-term in vitro culture. *Journal of Biomechanics*, **2014**, 47, 2173-82	2.9	50
161	Biomaterial-mediated delivery of degradative enzymes to improve meniscus integration and repair. *Acta Biomaterialia*, **2013**, 9, 6393-402	10.8	50
160	Biomaterials in the repair of sports injuries. *Nature Materials*, **2012**, 11, 652-4	27	49
159	The Role of Osmotic Pressure and Tension-Compression Nonlinearity in the Frictional Response of Articular Cartilage. *Transport in Porous Media*, **2003**, 50, 5-33	3.1	49
158	Translation of an injectable triple-interpenetrating-network hydrogel for intervertebral disc regeneration in a goat model. *Acta Biomaterialia*, **2017**, 60, 201-209	10.8	48
157	Improved cartilage repair via in vitro pre-maturation of MSC-seeded hyaluronic acid hydrogels. *Biomedical Materials (Bristol)*, **2012**, 7, 024110	3.5	48
156	Emerging therapies for cartilage regeneration in currently excluded □red knee□ populations. *Npj Regenerative Medicine*, **2019**, 4, 12	15.8	47
155	Porosity and cell preseeding influence electrospun scaffold maturation and meniscus integration in vitro. *Tissue Engineering - Part A*, **2013**, 19, 538-47	3.9	47
154	Cell migration: implications for repair and regeneration in joint disease. *Nature Reviews Rheumatology*, **2019**, 15, 167-179	8.1	45

153	Advancing cell therapies for intervertebral disc regeneration from the lab to the clinic: Recommendations of the ORS spine section. *JOR Spine*, **2018**, 1, e1036	3.7	45
152	Nucleus pulposus cells synthesize a functional extracellular matrix and respond to inflammatory cytokine challenge following long-term agarose culture. *European Cells and Materials*, **2011**, 22, 291-301	4.3	44
151	Cell therapy for the degenerating intervertebral disc. *Translational Research*, **2017**, 181, 49-58	11	43
150	High-throughput screening of a small molecule library for promoters and inhibitors of mesenchymal stem cell osteogenic differentiation. *Biotechnology and Bioengineering*, **2011**, 108, 163-74	4.9	43
149	Phenotypic stability, matrix elaboration and functional maturation of nucleus pulposus cells encapsulated in photocrosslinkable hyaluronic acid hydrogels. *Acta Biomaterialia*, **2015**, 12, 21-29	10.8	42
148	Engineering meniscus structure and function via multi-layered mesenchymal stem cell-seeded nanofibrous scaffolds. *Journal of Biomechanics*, **2015**, 48, 1412-9	2.9	42
147	Multi-scale structural and tensile mechanical response of annulus fibrosus to osmotic loading. *Annals of Biomedical Engineering*, **2012**, 40, 1610-21	4.7	42
146	Maturation state-dependent alterations in meniscus integration: implications for scaffold design and tissue engineering. *Tissue Engineering - Part A*, **2011**, 17, 193-204	3.9	42
145	Fibrous Scaffolds with Varied Fiber Chemistry and Growth Factor Delivery Promote Repair in a Porcine Cartilage Defect Model. *Tissue Engineering - Part A*, **2015**, 21, 2680-90	3.9	41
144	Cartilage matrix formation by bovine mesenchymal stem cells in three-dimensional culture is age-dependent. *Clinical Orthopaedics and Related Research*, **2011**, 469, 2744-53	2.2	41
143	Long-term mechanical function and integration of an implanted tissue-engineered intervertebral disc. *Science Translational Medicine*, **2018**, 10,	17.5	41
142	A radiopaque electrospun scaffold for engineering fibrous musculoskeletal tissues: Scaffold characterization and in vivo applications. *Acta Biomaterialia*, **2015**, 26, 97-104	10.8	40
141	Mechanically Induced Chromatin Condensation Requires Cellular Contractility in Mesenchymal Stem Cells. *Biophysical Journal*, **2016**, 111, 864-874	2.9	40
140	Fiber stretch and reorientation modulates mesenchymal stem cell morphology and fibrous gene expression on oriented nanofibrous microenvironments. *Annals of Biomedical Engineering*, **2011**, 39, 2780-90	4.7	40
139	Decorin Regulates the Aggrecan Network Integrity and Biomechanical Functions of Cartilage Extracellular Matrix. *ACS Nano*, **2019**, 13, 11320-11333	16.7	39
138	A Systematic Review and Guide to Mechanical Testing for Articular Cartilage Tissue Engineering. *Tissue Engineering - Part C: Methods*, **2019**, 25, 593-608	2.9	39
137	The Nuclear Option: Evidence Implicating the Cell Nucleus in Mechanotransduction. *Journal of Biomechanical Engineering*, **2017**, 139,	2.1	38
136	Thermosensitive Poly(N-vinylcaprolactam) Injectable Hydrogels for Cartilage Tissue Engineering. *Tissue Engineering - Part A*, **2017**, 23, 935-945	3.9	38

135	From repair to regeneration: biomaterials to reprogram the meniscus wound microenvironment. *Annals of Biomedical Engineering*, **2015**, 43, 529-42	4.7	38
134	Dose and Timing of N-Cadherin Mimetic Peptides Regulate MSC Chondrogenesis within Hydrogels. *Advanced Healthcare Materials*, **2018**, 7, e1701199	10.1	38
133	Functional consequences of glucose and oxygen deprivation on engineered mesenchymal stem cell-based cartilage constructs. *Osteoarthritis and Cartilage*, **2015**, 23, 134-42	6.2	37
132	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, 1841-9	3.9	36
131	Modeling interlamellar interactions in angle-ply biologic laminates for annulus fibrosus tissue engineering. *Biomechanics and Modeling in Mechanobiology*, **2011**, 10, 973-84	3.8	36
130	Maximizing cartilage formation and integration via a trajectory-based tissue engineering approach. *Biomaterials*, **2014**, 35, 2140-8	15.6	34
129	Biaxial mechanics and inter-lamellar shearing of stem-cell seeded electrospun angle-ply laminates for annulus fibrosus tissue engineering. *Journal of Orthopaedic Research*, **2013**, 31, 864-70	3.8	34
128	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	11.5	34
127	Mechanically-Activated Microcapsules for On-Demand Drug Delivery in Dynamically Loaded Musculoskeletal Tissues. *Advanced Functional Materials*, **2019**, 29, 1807909	15.6	33
126	Cross-Linking Chemistry of Tyramine-Modified Hyaluronan Hydrogels Alters Mesenchymal Stem Cell Early Attachment and Behavior. *Biomacromolecules*, **2017**, 18, 855-864	6.9	32
125	A Chemomechanical Model of Matrix and Nuclear Rigidity Regulation of Focal Adhesion Size. *Biophysical Journal*, **2015**, 109, 1807-17	2.9	32
124	Effects of Mesenchymal Stem Cell and Growth Factor Delivery on Cartilage Repair in a Mini-Pig Model. *Cartilage*, **2016**, 7, 174-84	3	32
123	Dynamic Loading and Tendon Healing Affect Multiscale Tendon Properties and ECM Stress Transmission. *Scientific Reports*, **2018**, 8, 10854	4.9	32
122	Duty Cycle of Deformational Loading Influences the Growth of Engineered Articular Cartilage. *Cellular and Molecular Bioengineering*, **2009**, 2, 386-394	3.9	32
121	Sliding contact loading enhances the tensile properties of mesenchymal stem cell-seeded hydrogels. *European Cells and Materials*, **2012**, 24, 29-45	4.3	32
120	Single-cell differences in matrix gene expression do not predict matrix deposition. *Nature Communications*, **2016**, 7, 10865	17.4	32
119	Role of cell-associated matrix in the development of free-swelling and dynamically loaded chondrocyte-seeded agarose gels. *Biorheology*, **2004**, 41, 223-37	1.7	32
118	Cartilage mechanical response under dynamic compression at physiological stress levels following collagenase digestion. *Annals of Biomedical Engineering*, **2008**, 36, 425-34	4.7	31

117	Dynamic deformational loading results in selective application of mechanical stimulation in a layered, tissue-engineered cartilage construct. *Biorheology*, **2006**, 43, 497-507	1.7	31
116	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	5.5	28
115	Early changes in cartilage pericellular matrix micromechanobiology portend the onset of post-traumatic osteoarthritis. *Acta Biomaterialia*, **2020**, 111, 267-278	10.8	28
114	Biphasic Finite Element Modeling Reconciles Mechanical Properties of Tissue-Engineered Cartilage Constructs Across Testing Platforms. *Tissue Engineering - Part A*, **2017**, 23, 663-674	3.9	26
113	Correlations between quantitative T2 and T1ρ MRI, mechanical properties and biochemical composition in a rabbit lumbar intervertebral disc degeneration model. *Journal of Orthopaedic Research*, **2016**, 34, 1382-8	3.8	25
112	Meniscus tissue engineering on the nanoscale: from basic principles to clinical application. *Journal of Knee Surgery*, **2009**, 22, 45-59	2.4	25
111	Physiology and Engineering of the Graded Interfaces of Musculoskeletal Junctions. *Annual Review of Biomedical Engineering*, **2018**, 20, 403-429	12	24
110	Aberrant mechanosensing in injured intervertebral discs as a result of boundary-constraint disruption and residual-strain loss. *Nature Biomedical Engineering*, **2019**, 3, 998-1008	19	24
109	Age-Dependent Subchondral Bone Remodeling and Cartilage Repair in a Minipig Defect Model. *Tissue Engineering - Part C: Methods*, **2017**, 23, 745-753	2.9	24
108	The influence of fibrous elastomer structure and porosity on matrix organization. *PLoS ONE*, **2010**, 5, e15717	3.7	24
107	High fidelity visualization of cell-to-cell variation and temporal dynamics in nascent extracellular matrix formation. *Scientific Reports*, **2016**, 6, 38852	4.9	24
106	Electrospun PLGA Nanofiber Scaffolds Release Ibuprofen Faster and Degrade Slower After In Vivo Implantation. *Annals of Biomedical Engineering*, **2017**, 45, 2348-2359	4.7	23
105	Low-serum media and dynamic deformational loading in tissue engineering of articular cartilage. *Annals of Biomedical Engineering*, **2008**, 36, 769-79	4.7	23
104	Metabolic Labeling to Probe the Spatiotemporal Accumulation of Matrix at the Chondrocyte-Hydrogel Interface. *Advanced Functional Materials*, **2020**, 30, 1909802	15.6	22
103	Biodegradable fibrous scaffolds with diverse properties by electrospinning candidates from a combinatorial macromer library. *Acta Biomaterialia*, **2010**, 6, 1219-26	10.8	22
102	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, 140-8	3.8	21
101	Anatomic Mesenchymal Stem Cell-Based Engineered Cartilage Constructs for Biologic Total Joint Replacement. *Tissue Engineering - Part A*, **2016**, 22, 386-95	3.9	21
100	Fabrication and evaluation of biomimetic-synthetic nanofibrous composites for soft tissue regeneration. *Cell and Tissue Research*, **2012**, 347, 803-13	4.2	21

99	Mechano-adaptation of the stem cell nucleus. *Nucleus*, **2018**, 9, 9-19	3.9	21
98	Sprifermin treatment enhances cartilage integration in an in vitro repair model. *Journal of Orthopaedic Research*, **2018**, 36, 2648-2656	3.8	21
97	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	10.8	20
96	Hypoxic Preconditioning Enhances Bone Marrow-Derived Mesenchymal Stem Cell Survival in a Low Oxygen and Nutrient-Limited 3D Microenvironment. *Cartilage*, **2021**, 12, 512-525	3	20
95	Maturation State and Matrix Microstructure Regulate Interstitial Cell Migration in Dense Connective Tissues. *Scientific Reports*, **2018**, 8, 3295	4.9	20
94	Intervertebral Disc Degeneration in a Percutaneous Mouse Tail Injury Model. *American Journal of Physical Medicine and Rehabilitation*, **2018**, 97, 170-177	2.6	20
93	ACVR1 FOP mutation alters mechanosensing and tissue stiffness during heterotopic ossification. *Molecular Biology of the Cell*, **2019**, 30, 17-29	3.5	20
92	Decorin regulates cartilage pericellular matrix micromechanobiology. *Matrix Biology*, **2021**, 96, 1-17	11.4	20
91	Donor Variation and Optimization of Human Mesenchymal Stem Cell Chondrogenesis in Hyaluronic Acid. *Tissue Engineering - Part A*, **2018**, 24, 1693-1703	3.9	20
90	In vivo performance of an acellular disc-like angle ply structure (DAPS) for total disc replacement in a small animal model. *Journal of Orthopaedic Research*, **2017**, 35, 23-31	3.8	19
89	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	10.8	19
88	Expansion of mesenchymal stem cells on electrospun scaffolds maintains stemness, mechano-responsivity, and differentiation potential. *Journal of Orthopaedic Research*, **2018**, 36, 808-815	3.8	19
87	Elevated BMP and Mechanical Signaling Through YAP1/RhoA Poises FOP Mesenchymal Progenitors for Osteogenesis. *Journal of Bone and Mineral Research*, **2019**, 34, 1894-1909	6.3	19
86	Time-dependent functional maturation of scaffold-free cartilage tissue analogs. *Journal of Biomechanics*, **2014**, 47, 2137-42	2.9	19
85	Influence of Fiber Stiffness on Meniscal Cell Migration into Dense Fibrous Networks. *Advanced Healthcare Materials*, **2020**, 9, e1901228	10.1	19
84	Autologous tendon-derived cell-seeded nanofibrous scaffolds improve rotator cuff repair in an age-dependent fashion. *Journal of Orthopaedic Research*, **2017**, 35, 1250-1257	3.8	18
83	Single Cell Imaging to Probe Mesenchymal Stem Cell N-Cadherin Mediated Signaling within Hydrogels. *Annals of Biomedical Engineering*, **2016**, 44, 1921-30	4.7	18
82	Nuclear softening expedites interstitial cell migration in fibrous networks and dense connective tissues. *Science Advances*, **2020**, 6, eaax5083	14.3	17

81	Mediation of Cartilage Matrix Degeneration and Fibrillation by Decorin in Post-traumatic Osteoarthritis. *Arthritis and Rheumatology*, **2020**, 72, 1266-1277	9.5	17
80	Fatigue loading of tendon results in collagen kinking and denaturation but does not change local tissue mechanics. *Journal of Biomechanics*, **2018**, 71, 251-256	2.9	17
79	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	2.9	16
78	Intervertebral disc development and disease-related genetic polymorphisms. *Genes and Diseases*, **2016**, 3, 171-177	6.6	16
77	Towards the scale up of tissue engineered intervertebral discs for clinical application. *Acta Biomaterialia*, **2018**, 70, 154-164	10.8	15
76	A high throughput mechanical screening device for cartilage tissue engineering. *Journal of Biomechanics*, **2014**, 47, 2130-6	2.9	15
75	The effect of applied compressive loading on tissue-engineered cartilage constructs cultured with TGF-beta3. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2006**, 2006, 779-82		15
74	Effect of overuse-induced tendinopathy on tendon healing in a rat supraspinatus repair model. *Journal of Orthopaedic Research*, **2016**, 34, 161-6	3.8	15
73	Chondrocyte and mesenchymal stem cell derived engineered cartilage exhibits differential sensitivity to pro-inflammatory cytokines. *Journal of Orthopaedic Research*, **2018**, 36, 2901-2910	3.8	15
72	Impact of guidance documents on translational large animal studies of cartilage repair. *Science Translational Medicine*, **2015**, 7, 310re9	17.5	14
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