Lawrence J Bonassar

List of Publications by Citations

255 papers	11,930 citations	59 h-index	98 g-index
273 ext. papers	13,310 ext. citations	5 avg, IF	6.4 L-index

#	Paper	IF	Citations
255	Microfluidic scaffolds for tissue engineering. *Nature Materials*, **2007**, 6, 908-15	27	498
254	Direct freeform fabrication of seeded hydrogels in arbitrary geometries. *Tissue Engineering*, **2006**, 12, 1325-35		299
253	Replacement of an avulsed phalanx with tissue-engineered bone. *New England Journal of Medicine*, **2001**, 344, 1511-4	59.2	260
252	Tuning three-dimensional collagen matrix stiffness independently of collagen concentration modulates endothelial cell behavior. *Acta Biomaterialia*, **2013**, 9, 4635-44	10.8	246
251	Dense type I collagen matrices that support cellular remodeling and microfabrication for studies of tumor angiogenesis and vasculogenesis in vitro. *Biomaterials*, **2010**, 31, 8596-607	15.6	243
250	Injection molding of chondrocyte/alginate constructs in the shape of facial implants. *Journal of Biomedical Materials Research Part B*, **2001**, 55, 503-11		229
249	3D Bioprinting of Spatially Heterogeneous Collagen Constructs for Cartilage Tissue Engineering. *ACS Biomaterials Science and Engineering*, **2016**, 2, 1800-1805	5.5	216
248	The role of cartilage streaming potential, fluid flow and pressure in the stimulation of chondrocyte biosynthesis during dynamic compression. *Journal of Biomechanics*, **1995**, 28, 1055-66	2.9	211
247	Comparison of chondrogensis in static and perfused bioreactor culture. *Biotechnology Progress*, **2000**, 16, 893-6	2.8	200
246	Matrix stiffening promotes a tumor vasculature phenotype. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 492-497	11.5	197
245	A microfluidic biomaterial. *Journal of the American Chemical Society*, **2005**, 127, 13788-9	16.4	190
244	Effect of substrate mechanics on chondrocyte adhesion to modified alginate surfaces. *Archives of Biochemistry and Biophysics*, **2004**, 422, 161-7	4.1	181
243	Tissue-engineered composites of anulus fibrosus and nucleus pulposus for intervertebral disc replacement. *Spine*, **2004**, 29, 1290-7; discussion 1297-8	3.3	179
242	The effect of dynamic compression on the response of articular cartilage to insulin-like growth factor-I. *Journal of Orthopaedic Research*, **2001**, 19, 11-7	3.8	177
241	Prevention of cartilage degeneration in a rat model of osteoarthritis by intraarticular treatment with recombinant lubricin. *Arthritis and Rheumatism*, **2009**, 60, 840-7		156
240	Tissue-engineered lung: an in vivo and in vitro comparison of polyglycolic acid and pluronic F-127 hydrogel/somatic lung progenitor cell constructs to support tissue growth. *Tissue Engineering*, **2006**, 12, 1213-25		148
239	Tissue engineering: The first decade and beyond. *Journal of Cellular Biochemistry*, **1998**, 72 Suppl 30-31, 297-303	4.7	139

238	Changes in cartilage composition and physical properties due to stromelysin degradation. *Arthritis and Rheumatism*, **1995**, 38, 173-83		138
237	Tissue-engineered intervertebral discs produce new matrix, maintain disc height, and restore biomechanical function to the rodent spine. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 13106-11	11.5	136
236	High-fidelity tissue engineering of patient-specific auricles for reconstruction of pediatric microtia and other auricular deformities. *PLoS ONE*, **2013**, 8, e56506	3.7	135
235	Methods for photocrosslinking alginate hydrogel scaffolds with high cell viability. *Tissue Engineering - Part C: Methods*, **2011**, 17, 173-9	2.9	133
234	Characterization of polylactic acid-polyglycolic acid composites for cartilage tissue engineering. *Tissue Engineering*, **2003**, 9, 63-70		129
233	Biomechanical and biochemical characterization of composite tissue-engineered intervertebral discs. *Biomaterials*, **2006**, 27, 362-70	15.6	128
232	Temporal bone fractures: otic capsule sparing versus otic capsule violating clinical and radiographic considerations. *Arteriosclerosis, Thrombosis, and Vascular Biology*, **1999**, 47, 1079-83	9.4	127
231	Self-assembly of aligned tissue-engineered annulus fibrosus and intervertebral disc composite via collagen gel contraction. *Tissue Engineering - Part A*, **2010**, 16, 1339-48	3.9	126
230	Lubrication mode analysis of articular cartilage using Stribeck surfaces. *Journal of Biomechanics*, **2008**, 41, 1910-8	2.9	126
229	Correlating rheological properties and printability of collagen bioinks: the effects of riboflavin photocrosslinking and pH. *Biofabrication*, **2017**, 9, 034102	10.5	121
228	Review of injectable cartilage engineering using fibrin gel in mice and swine models. *Tissue Engineering*, **2006**, 12, 1151-68		119
227	Autologous tissue-engineered trachea with sheep nasal chondrocytes. *Journal of Thoracic and Cardiovascular Surgery*, **2002**, 123, 1177-84	1.5	116
226	Additive manufacturing for in situ repair of osteochondral defects. *Biofabrication*, **2010**, 2, 035004	10.5	114
225	Mapping the depth dependence of shear properties in articular cartilage. *Journal of Biomechanics*, **2008**, 41, 2430-7	2.9	114
224	Detection of interleukin-1 in the cartilage of patients with osteoarthritis: a possible autocrine/paracrine role in pathogenesis. *Osteoarthritis and Cartilage*, **1997**, 5, 293-300	6.2	109
223	A composite tissue-engineered trachea using sheep nasal chondrocyte and epithelial cells. *FASEB Journal*, **2003**, 17, 823-8	0.9	109
222	Binding and localization of recombinant lubricin to articular cartilage surfaces. *Journal of Orthopaedic Research*, **2007**, 25, 283-92	3.8	108
221	Injectable tissue-engineered cartilage with different chondrocyte sources. *Plastic and Reconstructive Surgery*, **2004**, 113, 1361-71	2.7	104

220	Image-guided tissue engineering of anatomically shaped implants via MRI and micro-CT using injection molding. *Tissue Engineering - Part A*, **2008**, 14, 1195-202	3.9	103
219	Measurement of local strains in intervertebral disc anulus fibrosus tissue under dynamic shear: contributions of matrix fiber orientation and elastin content. *Journal of Biomechanics*, **2009**, 42, 2279-85	2.9	101
218	Poly(lactide-co-glycolide) microspheres as a moldable scaffold for cartilage tissue engineering. *Biomaterials*, **2005**, 26, 1945-52	15.6	92
217	Mechanical and physicochemical regulation of the action of insulin-like growth factor-I on articular cartilage. *Archives of Biochemistry and Biophysics*, **2000**, 379, 57-63	4.1	92
216	Cells (MC3T3-E1)-laden alginate scaffolds fabricated by a modified solid-freeform fabrication process supplemented with an aerosol spraying. *Biomacromolecules*, **2012**, 13, 2997-3003	6.9	90
215	Tissue engineering of autologous cartilage for craniofacial reconstruction by injection molding. *Plastic and Reconstructive Surgery*, **2003**, 112, 793-9; discussion 800-1	2.7	89
214	Direct perfusion measurements of cancellous bone anisotropic permeability. *Journal of Biomechanics*, **2001**, 34, 1197-202	2.9	89
213	An overview of tissue engineered bone. *Clinical Orthopaedics and Related Research*, **1999**, S375-81	2.2	86
212	Elastoviscous Transitions of Articular Cartilage Reveal a Mechanism of Synergy between Lubricin and Hyaluronic Acid. *PLoS ONE*, **2015**, 10, e0143415	3.7	85
211	Age dependence of biochemical and biomechanical properties of tissue-engineered human septal cartilage. *Biomaterials*, **2002**, 23, 3087-94	15.6	85
210	Integration of layered chondrocyte-seeded alginate hydrogel scaffolds. *Biomaterials*, **2007**, 28, 2987-93	15.6	78
209	Boundary mode lubrication of articular cartilage by recombinant human lubricin. *Journal of Orthopaedic Research*, **2009**, 27, 771-7	3.8	77
208	Inhibition of cartilage degradation and changes in physical properties induced by IL-1beta and retinoic acid using matrix metalloproteinase inhibitors. *Archives of Biochemistry and Biophysics*, **1997**, 344, 404-12	4.1	77
207	Identification and initial characterization of spore-like cells in adult mammals. *Journal of Cellular Biochemistry*, **2001**, 80, 455-460	4.7	76
206	Cell(MC3T3-E1)-printed poly(?-caprolactone)/alginate hybrid scaffolds for tissue regeneration. *Macromolecular Rapid Communications*, **2013**, 34, 142-9	4.8	72
205	Increased mixing improves hydrogel homogeneity and quality of three-dimensional printed constructs. *Tissue Engineering - Part C: Methods*, **2011**, 17, 239-48	2.9	68
204	A novel approach to regenerating periodontal tissue by grafting autologous cultured periosteum. *Tissue Engineering*, **2006**, 12, 1227-335		68
203	Recent advances in biological therapies for disc degeneration: tissue engineering of the annulus fibrosus, nucleus pulposus and whole intervertebral discs. *Current Opinion in Biotechnology*, **2013**, 24, 872-9	11.4	67

202	The effects of needle puncture injury on microscale shear strain in the intervertebral disc annulus fibrosus. *Spine Journal*, **2010**, 10, 1098-105	4	67
201	Three-Dimensional Bioprinting and Its Potential in the Field of Articular Cartilage Regeneration. *Cartilage*, **2017**, 8, 327-340	3	64
200	In vivo tibial compression decreases osteolysis and tumor formation in a human metastatic breast cancer model. *Journal of Bone and Mineral Research*, **2013**, 28, 2357-67	6.3	64
199	Modeling the dynamic composition of engineered cartilage. *Archives of Biochemistry and Biophysics*, **2002**, 408, 246-54	4.1	64
198	An allogenic cell-based implant for meniscal lesions. *American Journal of Sports Medicine*, **2006**, 34, 1779-89	6.2	63
197	High-resolution spatial mapping of shear properties in cartilage. *Journal of Biomechanics*, **2010**, 43, 796-800	2.9	60
196	Structure-function relations and rigidity percolation in the shear properties of articular cartilage. *Biophysical Journal*, **2014**, 107, 1721-30	2.9	59
195	Age-related changes in the composition and mechanical properties of human nasal cartilage. *Archives of Biochemistry and Biophysics*, **2002**, 403, 132-40	4.1	59
194	Biomechanical analysis of a chondrocyte-based repair model of articular cartilage. *Tissue Engineering*, **1999**, 5, 317-26		59
193	Integrative repair of cartilage with articular and nonarticular chondrocytes. *Tissue Engineering*, **2004**, 10, 1308-15		57
192	Analysis of bending behavior of native and engineered auricular and costal cartilage. *Journal of Biomedical Materials Research Part B*, **2004**, 68, 597-602		54
191	Post-traumatic osteoarthritis of the ankle: A distinct clinical entity requiring new research approaches. *Journal of Orthopaedic Research*, **2017**, 35, 440-453	3.8	53
190	In vitro tissue engineering to generate a human-sized auricle and nasal tip. *Laryngoscope*, **2003**, 113, 90-4	3.6	53
189	A biomechanical analysis of an engineered cell-scaffold implant for cartilage repair. *Annals of Plastic Surgery*, **2001**, 46, 533-7	1.7	53
188	High density type I collagen gels for tissue engineering of whole menisci. *Acta Biomaterialia*, **2013**, 9, 7787-95	10.8	52
187	Dynamic compressive loading of image-guided tissue engineered meniscal constructs. *Journal of Biomechanics*, **2011**, 44, 509-16	2.9	52
186	Processing of type I collagen gels using nonenzymatic glycation. *Journal of Biomedical Materials Research - Part A*, **2010**, 93, 843-51	5.4	51
185	Tissue-engineered calcium alginate patches in the repair of chronic chinchilla tympanic membrane perforations. *Laryngoscope*, **2006**, 116, 700-4	3.6	51

184	Role for interleukin 1alpha in the inhibition of chondrogenesis in autologous implants using polyglycolic acid-polylactic acid scaffolds. *Tissue Engineering*, **2005**, 11, 192-200		51
183	A novel injectable approach for cartilage formation in vivo using PLG microspheres. *Annals of Biomedical Engineering*, **2004**, 32, 418-29	4.7	50
182	Biological Treatment Approaches for Degenerative Disk Disease: A Literature Review of In Vivo Animal and Clinical Data. *Global Spine Journal*, **2016**, 6, 497-518	2.7	50
181	Measuring microscale strain fields in articular cartilage during rapid impact reveals thresholds for chondrocyte death and a protective role for the superficial layer. *Journal of Biomechanics*, **2015**, 48, 3440-8	2.8	49
180	Conditions affecting cell seeding onto three-dimensional scaffolds for cellular-based biodegradable implants. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2009** , 91, 80-7	3.5	49
179	Tissue-engineered spinal cord. *Transplantation Proceedings*, **2001**, 33, 592-8	1.1	49
178	Fabrication of cell-laden three-dimensional alginate-scaffolds with an aerosol cross-linking process. *Journal of Materials Chemistry*, **2012**, 22, 18735		47
177	Comparison of tracheal and nasal chondrocytes for tissue engineering of the trachea. *Annals of Thoracic Surgery*, **2003**, 76, 1884-8	2.7	47
176	High density cell seeding affects the rheology and printability of collagen bioinks. *Biofabrication*, **2019**, 11, 045016	10.5	46
175	Microstructured templates for directed growth and vascularization of soft tissue in vivo. *Biomaterials*, **2011**, 32, 5391-401	15.6	46
174	Cartilage degradation and associated changes in biomechanical and electromechanical properties. *Acta Orthopaedica*, **1995**, 66, 38-44		46
173	Annular repair using high-density collagen gel: a rat-tail in vivo model. *Spine*, **2014**, 39, 198-206	3.3	45
172	Effects of enzymatic treatments on the depth-dependent viscoelastic shear properties of articular cartilage. *Journal of Orthopaedic Research*, **2014**, 32, 1652-7	3.8	45
171	Modulation of lubricin biosynthesis and tissue surface properties following cartilage mechanical injury. *Arthritis and Rheumatism*, **2009**, 60, 133-42		45
170	Characterization of mesenchymal stem cells and fibrochondrocytes in three-dimensional co-culture: analysis of cell shape, matrix production, and mechanical performance. *Stem Cell Research and Therapy*, **2016**, 7, 39	8.3	44
169	Injectable, high-density collagen gels for annulus fibrosus repair: An in vitro rat tail model. *Journal of Biomedical Materials Research - Part A*, **2015**, 103, 2571-81	5.4	43
168	Effect of media mixing on ECM assembly and mechanical properties of anatomically-shaped tissue engineered meniscus. *Biomaterials*, **2010**, 31, 6756-63	15.6	43
167	Cell-based bonding of articular cartilage: An extended study. *Journal of Biomedical Materials Research Part B*, **2003**, 64, 517-24		43

166	Molecular transport in articular cartilage - what have we learned from the past 50 years?. *Nature Reviews Rheumatology*, **2018**, 14, 393-403	8.1	42
165	Induction of fiber alignment and mechanical anisotropy in tissue engineered menisci with mechanical anchoring. *Journal of Biomechanics*, **2015**, 48, 1436-43	2.9	41
164	Localization of viscous behavior and shear energy dissipation in articular cartilage under dynamic shear loading. *Journal of Biomechanical Engineering*, **2013**, 135, 31002	2.1	41
163	Mechanical characterization of matrix-induced autologous chondrocyte implantation (MACI) grafts in an equine model at 53 weeks. *Journal of Biomechanics*, **2015**, 48, 1944-9	2.9	40
162	A role for the interleukin-1 receptor in the pathway linking static mechanical compression to decreased proteoglycan synthesis in surface articular cartilage. *Archives of Biochemistry and Biophysics*, **2003**, 413, 229-35	4.1	40
161	Riboflavin crosslinked high-density collagen gel for the repair of annular defects in intervertebral discs: An in vivo study. *Acta Biomaterialia*, **2015**, 26, 215-24	10.8	38
160	An optical method for evaluation of geometric fidelity for anatomically shaped tissue-engineered constructs. *Tissue Engineering - Part C: Methods*, **2010**, 16, 693-703	2.9	38
159	Effect of a poly(propylene fumarate) foaming cement on the healing of bone defects. *Tissue Engineering*, **1999**, 5, 305-16		38
158	Physiologically Distributed Loading Patterns Drive the Formation of Zonally Organized Collagen Structures in Tissue-Engineered Meniscus. *Tissue Engineering - Part A*, **2016**, 22, 907-16	3.9	38
157	Cell-laden poly(e-caprolactone)/alginate hybrid scaffolds fabricated by an aerosol cross-linking process for obtaining homogeneous cell distribution: fabrication, seeding efficiency, and cell proliferation and distribution. *Tissue Engineering - Part C: Methods*, **2013**, 19, 784-93	2.9	36
156	Total disc replacement using tissue-engineered intervertebral discs in the canine cervical spine. *PLoS ONE*, **2017**, 12, e0185716	3.7	35
155	Porous poly(vinyl alcohol)-hydrogel matrix-engineered biosynthetic cartilage. *Tissue Engineering - Part A*, **2011**, 17, 301-9	3.9	35
154	Fabrication of tissue engineered tympanic membrane patches using computer-aided design and injection molding. *Laryngoscope*, **2004**, 114, 1290-5	3.6	35
153	Image-based tissue engineering of a total intervertebral disc implant for restoration of function to the rat lumbar spine. *NMR in Biomedicine*, **2012**, 25, 443-51	4.4	34
152	The effect of the duration of mechanical stimulation and post-stimulation culture on the structure and properties of dynamically compressed tissue-engineered menisci. *Tissue Engineering - Part A*, **2012**, 18, 1365-75	3.9	34
151	Activation and inhibition of endogenous matrix metalloproteinases in articular cartilage: effects on composition and biophysical properties. *Archives of Biochemistry and Biophysics*, **1996**, 333, 359-67	4.1	34
150	Insights into interstitial flow, shear stress, and mass transport effects on ECM heterogeneity in bioreactor-cultivated engineered cartilage hydrogels. *Biomechanics and Modeling in Mechanobiology*, **2012**, 11, 689-702	3.8	33
149	Chondrocyte calcium signaling in response to fluid flow is regulated by matrix adhesion in 3-D alginate scaffolds. *Archives of Biochemistry and Biophysics*, **2011**, 505, 112-7	4.1	33

148	Frictional properties of the meniscus improve after scaffold-augmented repair of partial meniscectomy: a pilot study. *Clinical Orthopaedics and Related Research*, **2011**, 469, 2817-23	2.2	33
147	Combined nucleus pulposus augmentation and annulus fibrosus repair prevents acute intervertebral disc degeneration after discectomy. *Science Translational Medicine*, **2020**, 12,	17.5	32
146	Binding and lubrication of biomimetic boundary lubricants on articular cartilage. *Journal of Orthopaedic Research*, **2017**, 35, 548-557	3.8	32
145	Image-guided tissue engineering. *Journal of Cellular and Molecular Medicine*, **2009**, 13, 1428-36	5.6	32
144	Non-enzymatic glycation of chondrocyte-seeded collagen gels for cartilage tissue engineering. *Journal of Orthopaedic Research*, **2008**, 26, 1434-9	3.8	32
143	Age dependence of cellular properties of human septal cartilage: implications for tissue engineering. *JAMA Otolaryngology*, **2001**, 127, 1248-52		32
142	Next Generation Tissue Engineering of Orthopedic Soft Tissue-to-Bone Interfaces. *MRS Communications*, **2017**, 7, 289-308	2.7	31
141	Microscale frictional strains determine chondrocyte fate in loaded cartilage. *Journal of Biomechanics*, **2018**, 74, 72-78	2.9	31
140	Annulus Fibrosus Repair Using High-Density Collagen Gel: An In Vivo Ovine Model. *Spine*, **2018**, 43, E208-E215	3.3	31
139	Tissue engineering cartilage with aged articular chondrocytes in vivo. *Plastic and Reconstructive Surgery*, **2006**, 118, 41-9; discussion 50-3	2.7	30
138	Aerosol delivery of mammalian cells for tissue engineering. *Biotechnology and Bioengineering*, **2005**, 91, 801-7	4.9	30
137	Anatomic variation of depth-dependent mechanical properties in neonatal bovine articular cartilage. *Journal of Orthopaedic Research*, **2013**, 31, 686-91	3.8	29
136	Role of TGF-beta and FGF in the treatment of radiation-impaired wounds using a novel drug delivery system. *Plastic and Reconstructive Surgery*, **2008**, 122, 1036-1045	2.7	29
135	Adhesive properties of laminated alginate gels for tissue engineering of layered structures. *Journal of Biomedical Materials Research - Part A*, **2008**, 85, 611-8	5.4	29
134	Effects of chitosan coatings on polypropylene mesh for implantation in a rat abdominal wall model. *Tissue Engineering - Part A*, **2013**, 19, 2713-23	3.9	28
133	Biologic Annulus Fibrosus Repair: A Review of Preclinical In Vivo Investigations. *Tissue Engineering - Part B: Reviews*, **2018**, 24, 179-190	7.9	28
132	Mechanical properties and structure-function relationships in articular cartilage repaired using IGF-I gene-enhanced chondrocytes. *Journal of Orthopaedic Research*, **2016**, 34, 149-53	3.8	27
131	In vivo annular repair using high-density collagen gel seeded with annulus fibrosus cells. *Acta Biomaterialia*, **2018**, 79, 230-238	10.8	26

130	Interaction of epidermal growth factor and insulin-like growth factor-I in the regulation of growth plate chondrocytes. *Experimental Cell Research*, **1997**, 234, 1-6	4.2	25
129	Tissue-engineered human auricular cartilage demonstrates euploidy by flow cytometry. *Tissue Engineering*, **2002**, 8, 85-92		25
128	Mesenchymal Stem Cell-Seeded High-Density Collagen Gel for Annular Repair: 6-Week Results From In Vivo Sheep Models. *Neurosurgery*, **2019**, 85, E350-E359	3.2	25
127	Fibronectin mediates enhanced wear protection of lubricin during shear. *Biomacromolecules*, **2015**, 16, 2884-94	6.9	24
126	Mitoprotective therapy preserves chondrocyte viability and prevents cartilage degeneration in an ex vivo model of posttraumatic osteoarthritis. *Journal of Orthopaedic Research*, **2018**, 36, 2147	3.8	24
125	The effect of IGF-I on anatomically shaped tissue-engineered menisci. *Tissue Engineering - Part A*, **2013**, 19, 1443-50	3.9	24
124	Mitochondrial dysfunction is an acute response of articular chondrocytes to mechanical injury. *Journal of Orthopaedic Research*, **2018**, 36, 739-750	3.8	24
123	Fibroblasts regulate contractile force independent of MMP activity in 3D-collagen. *Biochemical and Biophysical Research Communications*, **2003**, 312, 725-32	3.4	24
122	Human talar and femoral cartilage have distinct mechanical properties near the articular surface. *Journal of Biomechanics*, **2016**, 49, 3320-3327	2.9	23
121	Initial investigation of individual and combined annulus fibrosus and nucleus pulposus repair ex vivo. *Acta Biomaterialia*, **2017**, 59, 192-199	10.8	23
120	Fiber development and matrix production in tissue-engineered menisci using bovine mesenchymal stem cells and fibrochondrocytes. *Connective Tissue Research*, **2017**, 58, 329-341	3.3	22
119	Characterization of Tissue Response to Impact Loads Delivered Using a Hand-Held Instrument for Studying Articular Cartilage Injury. *Cartilage*, **2015**, 6, 226-32	3	22
118	Assessment of intervertebral disc degeneration based on quantitative magnetic resonance imaging analysis: an in vivo study. *Spine*, **2014**, 39, E369-78	3.3	22
117	Parametric finite element analysis of physical stimuli resulting from mechanical stimulation of tissue engineered cartilage. *Journal of Biomechanical Engineering*, **2009**, 131, 061014	2.1	22
116	Matrix metalloproteinase activity synergizes with alpha2beta1 integrins to enhance collagen remodeling. *Experimental Cell Research*, **2005**, 310, 79-87	4.2	22
115	Clinical doses of radiation reduce collagen matrix stiffness. *APL Bioengineering*, **2018**, 2, 031901	6.6	21
114	Tissue-engineered intervertebral discs: MRI results and histology in the rodent spine. *Journal of Neurosurgery: Spine*, **2014**, 20, 443-51	2.8	21
113	Enhanced boundary lubrication properties of engineered menisci by lubricin localization with insulin-like growth factor I treatment. *Journal of Biomechanics*, **2014**, 47, 2183-8	2.9	21

112	Galectin-3 Binds to Lubricin and Reinforces the Lubricating Boundary Layer of Articular Cartilage. *Scientific Reports*, **2016**, 6, 25463	4.9	21
111	Cyclic Mechanical Loading Enhances Transport of Antibodies Into Articular Cartilage. *Journal of Biomechanical Engineering*, **2017**, 139,	2.1	20
110	Joint-dependent response to impact and implications for post-traumatic osteoarthritis. *Osteoarthritis and Cartilage*, **2015**, 23, 1130-7	6.2	20
109	A pre-clinical test platform for the functional evaluation of scaffolds for musculoskeletal defects: the meniscus. *HSS Journal*, **2011**, 7, 157-63	2	20
108	Analysis of frictional behavior and changes in morphology resulting from cartilage articulation with porous polyurethane foams. *Journal of Orthopaedic Research*, **2010**, 28, 1292-9	3.8	20
107	Long-Term Morphological and Microarchitectural Stability of Tissue-Engineered, Patient-Specific Auricles In Vivo. *Tissue Engineering - Part A*, **2016**, 22, 461-8	3.9	20
106	Boundary mode lubrication of articular cartilage with a biomimetic diblock copolymer. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 12437-12441	11.5	18
105	Total disc replacement using a tissue-engineered intervertebral disc in vivo: new animal model and initial results. *Evidence-based Spine-care Journal*, **2010**, 1, 62-6		18
104	Mathematical modeling and frequency gradient analysis of cellular and vascular invasion into integra and strattice: toward optimal design of tissue regeneration scaffolds. *Plastic and Reconstructive Surgery*, **2012**, 129, 89-99	2.7	18
103	Tissue engineering the human auricle by auricular chondrocyte-mesenchymal stem cell co-implantation. *PLoS ONE*, **2018**, 13, e0202356	3.7	18
102	Sub-critical impact inhibits the lubricating mechanisms of articular cartilage. *Journal of Biomechanics*, **2017**, 53, 64-70	2.9	17
101	Integrin α10β1-Selected Mesenchymal Stem Cells Mitigate the Progression of Osteoarthritis in an Equine Talar Impact Model. *American Journal of Sports Medicine*, **2020**, 48, 612-623	6.8	17
100	Tunable Lubricin-mimetics for Boundary Lubrication of Cartilage. *Biotribology*, **2017**, 9, 18-23	2.3	16
99	Hypoxic Expansion of Human Mesenchymal Stem Cells Enhances Three-Dimensional Maturation of Tissue-Engineered Intervertebral Discs. *Tissue Engineering - Part A*, **2017**, 23, 293-300	3.9	16
98	Understanding the Stiff-to-Compliant Transition of the Meniscal Attachments by Spatial Correlation of Composition, Structure, and Mechanics. *ACS Applied Materials & Interfaces*, **2019**, 11, 26559-26570	9.5	16
97	Calcium signaling in response to fluid flow by chondrocytes in 3D alginate culture. *Journal of Orthopaedic Research*, **2012**, 30, 793-9	3.8	16
96	Alteration of articular cartilage frictional properties by transforming growth factor beta, interleukin-1beta, and oncostatin M. *Arthritis and Rheumatism*, **2009**, 60, 440-9		16
95	Frictional characterization of injectable hyaluronic acids is more predictive of clinical outcomes than traditional rheological or viscoelastic characterization. *PLoS ONE*, **2019**, 14, e0216702	3.7	15

94	Identification of cartilage injury using quantitative multiphoton microscopy. *Osteoarthritis and Cartilage*, **2014**, 22, 355-62	6.2	15
93	3D Cell and Scaffold Patterning Strategies in Tissue Engineering. *Recent Patents on Biomedical Engineering*, **2013**, 6, 3-21		15
92	Effect of sustained-release PDGF and TGF-beta on cyclophosphamide-induced impaired wound healing. *Plastic and Reconstructive Surgery*, **2009**, 124, 1118-1124	2.7	15
91	Correlation between hearing loss and scala media area in guinea pigs with long-standing endolymphatic hydrops. *Otology and Neurotology*, **2003**, 24, 64-72	2.6	15
90	Histomorphometric analysis of a cell-based model of cartilage repair. *Tissue Engineering*, **2002**, 8, 839-46		15
89	The effect of hypoxia on thermosensitive poly(N-vinylcaprolactam) hydrogels with tunable mechanical integrity for cartilage tissue engineering. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2017**, 105, 1863-1873	3.5	14
88	A model system for developing a tissue engineered meniscal enthesis. *Acta Biomaterialia*, **2017**, 56, 110-118	10.3	14
87	A mechanical composite spheres analysis of engineered cartilage dynamics. *Journal of Biomechanical Engineering*, **2007**, 129, 473-80	2.1	14
86	Cellular and Chemical Gradients to Engineer the Meniscus-to-Bone Insertion. *Advanced Healthcare Materials*, **2019**, 8, e1800806	10.1	14
85	Dose-dependent response of tissue-engineered intervertebral discs to dynamic unconfined compressive loading. *Tissue Engineering - Part A*, **2015**, 21, 564-72	3.9	13
84	Biomechanical and biochemical characterization of porcine tracheal cartilage. *Laryngoscope*, **2016**, 126, E325-31	3.6	13
83	The clot thickens: Autologous and allogeneic fibrin sealants are mechanically equivalent in an ex vivo model of cartilage repair. *PLoS ONE*, **2019**, 14, e0224756	3.7	13
82	Quantitative characterization of mesenchymal stem cell adhesion to the articular cartilage surface. *Journal of Biomedical Materials Research - Part A*, **2013**, 101, 3592-8	5.4	13
81	Mechanical properties and structure-function relationships of human chondrocyte-seeded cartilage constructs after in vitro culture. *Journal of Orthopaedic Research*, **2017**, 35, 2298-2306	3.8	12
80	Glycation of collagen matrices promotes breast tumor cell invasion. *Integrative Biology (United Kingdom)*, **2019**,	3.7	12
79	How can 50 years of solute transport data in articular cartilage inform the design of arthritis therapeutics?. *Osteoarthritis and Cartilage*, **2018**, 26, 1438-1446	6.2	12
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