Stephanie J Bryant

List of Publications by Citations

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112 papers	8,244 citations	39 h-index	90 g-index
113 ext. papers	9,011 ext. citations	7.6 avg, IF	6.48 L-index

#	Paper	IF	Citations
112	Biomaterials: where we have been and where we are going. *Annual Review of Biomedical Engineering*, **2004**, 6, 41-75	12	1188
111	Cell encapsulation in biodegradable hydrogels for tissue engineering applications. *Tissue Engineering - Part B: Reviews*, **2008**, 14, 149-65	7.9	878
110	Hydrogel properties influence ECM production by chondrocytes photoencapsulated in poly(ethylene glycol) hydrogels. *Journal of Biomedical Materials Research Part B*, **2002**, 59, 63-72		659
109	Cytocompatibility of UV and visible light photoinitiating systems on cultured NIH/3T3 fibroblasts in vitro. *Journal of Biomaterials Science, Polymer Edition*, **2000**, 11, 439-57	3.5	605
108	In situ forming degradable networks and their application in tissue engineering and drug delivery. *Journal of Controlled Release*, **2002**, 78, 199-209	11.7	393
107	Controlling the spatial distribution of ECM components in degradable PEG hydrogels for tissue engineering cartilage. *Journal of Biomedical Materials Research Part B*, **2003**, 64, 70-9		354
106	The effects of substrate stiffness on the in vitro activation of macrophages and in vivo host response to poly(ethylene glycol)-based hydrogels. *Journal of Biomedical Materials Research - Part A* , **2012**, 100, 1375-86	5.4	290
105	Encapsulating chondrocytes in degrading PEG hydrogels with high modulus: engineering gel structural changes to facilitate cartilaginous tissue production. *Biotechnology and Bioengineering*, **2004**, 86, 747-55	4.9	254
104	Tailoring the degradation of hydrogels formed from multivinyl poly(ethylene glycol) and poly(vinyl alcohol) macromers for cartilage tissue engineering. *Biomacromolecules*, **2003**, 4, 283-92	6.9	240
103	Photo-patterning of porous hydrogels for tissue engineering. *Biomaterials*, **2007**, 28, 2978-86	15.6	215
102	Crosslinking density influences chondrocyte metabolism in dynamically loaded photocrosslinked poly(ethylene glycol) hydrogels. *Annals of Biomedical Engineering*, **2004**, 32, 407-17	4.7	194
101	Synthesis and Characterization of Photopolymerized Multifunctional Hydrogels: Water-Soluble Poly(Vinyl Alcohol) and Chondroitin Sulfate Macromers for Chondrocyte Encapsulation. *Macromolecules*, **2004**, 37, 6726-6733	5.5	157
100	Crosslinking density influences the morphology of chondrocytes photoencapsulated in PEG hydrogels during the application of compressive strain. *Journal of Orthopaedic Research*, **2004**, 22, 1143-9	3.8	149
99	Manipulations in hydrogel chemistry control photoencapsulated chondrocyte behavior and their extracellular matrix production. *Journal of Biomedical Materials Research - Part A*, **2003**, 67, 1430-6	5.4	128
98	Comparison of photopolymerizable thiol-ene PEG and acrylate-based PEG hydrogels for cartilage development. *Biomaterials*, **2013**, 34, 9969-79	15.6	114
97	Incorporation of tissue-specific molecules alters chondrocyte metabolism and gene expression in photocrosslinked hydrogels. *Acta Biomaterialia*, **2005**, 1, 243-52	10.8	105
96	Immunomodulation by mesenchymal stem cells combats the foreign body response to cell-laden synthetic hydrogels. *Biomaterials*, **2015**, 41, 79-88	15.6	91

95	Linking the foreign body response and protein adsorption to PEG-based hydrogels using proteomics. *Biomaterials*, **2015**, 41, 26-36	15.6	89
94	Characterization of the in vitro macrophage response and in vivo host response to poly(ethylene glycol)-based hydrogels. *Journal of Biomedical Materials Research - Part A*, **2010**, 93, 941-53	5.4	85
93	Mechanical loading regulates human MSC differentiation in a multi-layer hydrogel for osteochondral tissue engineering. *Acta Biomaterialia*, **2015**, 21, 142-53	10.8	80
92	Designing 3D photopolymer hydrogels to regulate biomechanical cues and tissue growth for cartilage tissue engineering. *Pharmaceutical Research*, **2008**, 25, 2379-86	4.5	64
91	Temporal progression of the host response to implanted poly(ethylene glycol)-based hydrogels. *Journal of Biomedical Materials Research - Part A*, **2011**, 96, 621-31	5.4	60
90	Understanding and Improving Mechanical Properties in 3D printed Parts Using a Dual-Cure Acrylate-Based Resin for Stereolithography. *Advanced Engineering Materials*, **2018**, 20, 1800876	3.5	56
89	The effects of intermittent dynamic loading on chondrogenic and osteogenic differentiation of human marrow stromal cells encapsulated in RGD-modified poly(ethylene glycol) hydrogels. *Acta Biomaterialia*, **2011**, 7, 3829-40	10.8	55
88	Cell-matrix interactions and dynamic mechanical loading influence chondrocyte gene expression and bioactivity in PEG-RGD hydrogels. *Acta Biomaterialia*, **2009**, 5, 2832-46	10.8	53
87	Comparative study of the viscoelastic mechanical behavior of agarose and poly(ethylene glycol) hydrogels. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2011**, 99, 158-69	3.5	52
86	An enzyme-sensitive PEG hydrogel based on aggrecan catabolism for cartilage tissue engineering. *Advanced Healthcare Materials*, **2015**, 4, 420-31	10.1	51
85	Degradation improves tissue formation in (un)loaded chondrocyte-laden hydrogels. *Clinical Orthopaedics and Related Research*, **2011**, 469, 2725-34	2.2	50
84	Tuning tissue growth with scaffold degradation in enzyme-sensitive hydrogels: a mathematical model. *Soft Matter*, **2016**, 12, 7505-20	3.6	49
83	Dynamic loading stimulates chondrocyte biosynthesis when encapsulated in charged hydrogels prepared from poly(ethylene glycol) and chondroitin sulfate. *Matrix Biology*, **2010**, 29, 51-62	11.4	49
82	Semi-interpenetrating networks of hyaluronic acid in degradable PEG hydrogels for cartilage tissue engineering. *Acta Biomaterialia*, **2014**, 10, 3409-20	10.8	48
81	Nondestructive evaluation of a new hydrolytically degradable and photo-clickable PEG hydrogel for cartilage tissue engineering. *Acta Biomaterialia*, **2016**, 39, 1-11	10.8	47
80	Zwitterionic PEG-PC Hydrogels Modulate the Foreign Body Response in a Modulus-Dependent Manner. *Biomacromolecules*, **2018**, 19, 2880-2888	6.9	46
79	Programmable Hydrogels for Cell Encapsulation and Neo-Tissue Growth to Enable Personalized Tissue Engineering. *Advanced Healthcare Materials*, **2018**, 7, 1700605	10.1	46
78	On the role of hydrogel structure and degradation in controlling the transport of cell-secreted matrix molecules for engineered cartilage. *Journal of the Mechanical Behavior of Biomedical Materials*, **2013**, 19, 61-74	4.1	45

77	Mechanical stimulation of TMJ condylar chondrocytes encapsulated in PEG hydrogels. *Journal of Biomedical Materials Research - Part A*, **2007**, 83, 323-31	5.4	41
76	Influence of ECM proteins and their analogs on cells cultured on 2-D hydrogels for cardiac muscle tissue engineering. *Acta Biomaterialia*, **2009**, 5, 2929-38	10.8	40
75	Phenotypic changes in bone marrow-derived murine macrophages cultured on PEG-based hydrogels activated or not by lipopolysaccharide. *Acta Biomaterialia*, **2011**, 7, 123-32	10.8	40
74	Tissue engineering approaches to cell-based type 1 diabetes therapy. *Tissue Engineering - Part B: Reviews*, **2014**, 20, 455-67	7.9	39
73	Chondroitin sulfate and dynamic loading alter chondrogenesis of human MSCs in PEG hydrogels. *Biotechnology and Bioengineering*, **2012**, 109, 2671-82	4.9	39
72	Presence of pores and hydrogel composition influence tensile properties of scaffolds fabricated from well-defined sphere templates. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2011**, 96, 294-302	3.5	36
71	Heterogeneity is key to hydrogel-based cartilage tissue regeneration. *Soft Matter*, **2017**, 13, 4841-4855	3.6	33
70	The role of chondroitin sulfate in regulating hypertrophy during MSC chondrogenesis in a cartilage mimetic hydrogel under dynamic loading. *Biomaterials*, **2019**, 190-191, 51-62	15.6	33
69	Indentation mapping revealed poroelastic, but not viscoelastic, properties spanning native zonal articular cartilage. *Acta Biomaterialia*, **2017**, 64, 41-49	10.8	32
68	Alignment of multi-layered muscle cells within three-dimensional hydrogel macrochannels. *Acta Biomaterialia*, **2012**, 8, 2193-202	10.8	31
67	Interaction of hyaluronan binding peptides with glycosaminoglycans in poly(ethylene glycol) hydrogels. *Biomacromolecules*, **2014**, 15, 1132-41	6.9	30
66	Understanding the host response to cell-laden poly(ethylene glycol)-based hydrogels. *Biomaterials*, **2013**, 34, 952-64	15.6	29
65	Enzymatically degradable poly(ethylene glycol) hydrogels for the 3D culture and release of human embryonic stem cell derived pancreatic precursor cell aggregates. *Acta Biomaterialia*, **2015**, 22, 103-10	10.8	28
64	The In Vitro and In Vivo Response to MMP-Sensitive Poly(Ethylene Glycol) Hydrogels. *Annals of Biomedical Engineering*, **2016**, 44, 1959-69	4.7	26
63	Determination of the Polymer-Solvent Interaction Parameter for PEG Hydrogels in Water: Application of a Self Learning Algorithm. *Polymer*, **2015**, 66, 135-147	3.9	25
62	An in vitro and in vivo comparison of cartilage growth in chondrocyte-laden matrix metalloproteinase-sensitive poly(ethylene glycol) hydrogels with localized transforming growth factor β. *Acta Biomaterialia*, **2019**, 93, 97-110	10.8	23
61	A Stereolithography-Based 3D Printed Hybrid Scaffold for In Situ Cartilage Defect Repair. *Macromolecular Bioscience*, **2018**, 18, 1700267	5.5	23
60	Triphasic mixture model of cell-mediated enzymatic degradation of hydrogels. *Computer Methods in Biomechanics and Biomedical Engineering*, **2012**, 15, 1197-210	2.1	23

59	The effects of hydroxyapatite nanoparticles embedded in a MMP-sensitive photoclickable PEG hydrogel on encapsulated MC3T3-E1 pre-osteoblasts. *Biomedical Materials (Bristol)*, **2018**, 13, 045009	3.5	22
58	Cross-linking density alters early metabolic activities in chondrocytes encapsulated in poly(ethylene glycol) hydrogels and cultured in the rotating wall vessel. *Biotechnology and Bioengineering*, **2009**, 102, 1242-50	4.9	22
57	The Host Response in Tissue Engineering: Crosstalk Between Immune cells and Cell-laden Scaffolds. *Current Opinion in Biomedical Engineering*, **2018**, 6, 58-65	4.4	21
56	A photoclickable peptide microarray platform for facile and rapid screening of 3-D tissue microenvironments. *Biomaterials*, **2017**, 143, 17-28	15.6	21
55	Dynamic compressive loading differentially regulates chondrocyte anabolic and catabolic activity with age. *Biotechnology and Bioengineering*, **2013**, 110, 2046-57	4.9	21
54	Tuning Reaction and Diffusion Mediated Degradation of Enzyme-Sensitive Hydrogels. *Advanced Healthcare Materials*, **2016**, 5, 432-8	10.1	20
53	Incorporation of biomimetic matrix molecules in PEG hydrogels enhances matrix deposition and reduces load-induced loss of chondrocyte-secreted matrix. *Journal of Biomedical Materials Research - Part A*, **2011**, 97, 281-91	5.4	20
52	A MMP7-sensitive photoclickable biomimetic hydrogel for MSC encapsulation towards engineering human cartilage. *Journal of Biomedical Materials Research - Part A*, **2018**, 106, 2344-2355	5.4	18
51	Three dimensional live cell lithography. *Optics Express*, **2013**, 21, 10269-77	3.3	18
50	Age impacts extracellular matrix metabolism in chondrocytes encapsulated in degradable hydrogels. *Biomedical Materials (Bristol)*, **2012**, 7, 024111	3.5	18
49	Biomimetic soft fibrous hydrogels for contractile and pharmacologically responsive smooth muscle. *Acta Biomaterialia*, **2018**, 74, 121-130	10.8	18
48	Mechanical characterization of sequentially layered photo-clickable thiol-ene hydrogels. *Journal of the Mechanical Behavior of Biomedical Materials*, **2017**, 65, 454-465	4.1	17
47	Characterization of the chondrocyte secretome in photoclickable poly(ethylene glycol) hydrogels. *Biotechnology and Bioengineering*, **2017**, 114, 2096-2108	4.9	16
46	Local Heterogeneities Improve Matrix Connectivity in Degradable and Photoclickable Poly(ethylene glycol) Hydrogels for Applications in Tissue Engineering. *ACS Biomaterials Science and Engineering*, **2017**, 3, 2480-2492	5.5	16
45	Understanding the Spatiotemporal Degradation Behavior of Aggrecanase-Sensitive Poly(ethylene glycol) Hydrogels for Use in Cartilage Tissue Engineering. *Tissue Engineering - Part A*, **2017**, 23, 795-810	3.9	15
44	The in vitro effects of macrophages on the osteogenic capabilities of MC3T3-E1 cells encapsulated in a biomimetic poly(ethylene glycol) hydrogel. *Acta Biomaterialia*, **2018**, 71, 37-48	10.8	15
43	Regenerative Medicine Approaches for the Treatment of Pediatric Physeal Injuries. *Tissue Engineering - Part B: Reviews*, **2018**, 24, 85-97	7.9	15
42	Medium osmolarity and pericellular matrix development improves chondrocyte survival when photoencapsulated in poly(ethylene glycol) hydrogels at low densities. *Tissue Engineering - Part A*, **2009**, 15, 3037-48	3.9	15

41	Current and novel injectable hydrogels to treat focal chondral lesions: Properties and applicability. *Journal of Orthopaedic Research*, **2018**, 36, 64-75	3.8	14
40	Cell encapsulation spatially alters crosslink density of poly(ethylene glycol) hydrogels formed from free-radical polymerizations. *Acta Biomaterialia*, **2020**, 109, 37-50	10.8	14
39	Stereolithographic 3D Printing for Deterministic Control over Integration in Dual-Material Composites. *Advanced Materials Technologies*, **2019**, 4, 1900592	6.8	13
38	Effects of cell adhesion motif, fiber stiffness, and cyclic strain on tenocyte gene expression in a tendon mimetic fiber composite hydrogel. *Biochemical and Biophysical Research Communications*, **2018**, 499, 642-647	3.4	13
37	Ionic osmolytes and intracellular calcium regulate tissue production in chondrocytes cultured in a 3D charged hydrogel. *Matrix Biology*, **2014**, 40, 17-26	11.4	13
36	Photopolymerizable Injectable Cartilage Mimetic Hydrogel for the Treatment of Focal Chondral Lesions: A Proof of Concept Study in a Rabbit Animal Model. *American Journal of Sports Medicine*, **2019**, 47, 212-221	6.8	13
35	Recapitulating the Micromechanical Behavior of Tension and Shear in a Biomimetic Hydrogel for Controlling Tenocyte Response. *Advanced Healthcare Materials*, **2017**, 6, 1601095	10.1	12
34	and Models for Assessing the Host Response to Biomaterials. *Drug Discovery Today: Disease Models*, **2017**, 24, 13-21	1.3	12
33	Characterization of a Novel Fiber Composite Material for Mechanotransduction Research of Fibrous Connective Tissues. *Advanced Functional Materials*, **2010**, 20, 738-747	15.6	12
32	Photopolymerization of Hydrogel Scaffolds **2005**, 71-90		12
31	Dynamic mechanical loading and growth factors influence chondrogenesis of induced pluripotent mesenchymal progenitor cells in a cartilage-mimetic hydrogel. *Biomaterials Science*, **2019**, 7, 5388-5403	7.4	12
30	IDG-SW3 Osteocyte Differentiation and Bone Extracellular Matrix Deposition Are Enhanced in a 3D Matrix Metalloproteinase-Sensitive Hydrogel. *ACS Applied Bio Materials*, **2020**, 3, 1666-1680	4.1	11
29	Inflammation via myeloid differentiation primary response gene 88 signaling mediates the fibrotic response to implantable synthetic poly(ethylene glycol) hydrogels. *Acta Biomaterialia*, **2019**, 100, 105-117	10.8	10
28	Viscoelastic and Thermoreversible Networks Crosslinked by Non-covalent Interactions Between "Clickable" Nucleic Acids Oligomers and DNA.. *Polymer Chemistry*, **2020**, 11, 2959-2968	4.9	10
27	Viscoelasticity of hydrazone crosslinked poly(ethylene glycol) hydrogels directs chondrocyte morphology during mechanical deformation. *Biomaterials Science*, **2020**, 8, 3804-3811	7.4	9
26	A comparison of human mesenchymal stem cell osteogenesis in poly(ethylene glycol) hydrogels as a function of MMP-sensitive crosslinker and crosslink density in chemically defined medium. *Biotechnology and Bioengineering*, **2019**, 116, 1523-1536	4.9	9
25	Structural Modeling of Mechanosensitivity in Non-Muscle Cells: Multiscale Approach to Understand Cell Sensing. *ACS Biomaterials Science and Engineering*, **2017**, 3, 2934-2942	5.5	8
24	The effects of dynamic compressive loading on human mesenchymal stem cell osteogenesis in the stiff layer of a bilayer hydrogel. *Journal of Tissue Engineering and Regenerative Medicine*, **2019**, 13, 946-959	4.4	8

23	Prostaglandin E2 and Its Receptor EP2 Modulate Macrophage Activation and Fusion. *ACS Biomaterials Science and Engineering*, **2020**, 6, 2668-2681	5.5	8
22	The role of percolation in hydrogel-based tissue engineering and bioprinting *Current Opinion in Biomedical Engineering*, **2020**, 15, 68-74	4.4	8
21	An Instrumented Bioreactor for Mechanical Stimulation and Real-Time, Nondestructive Evaluation of Engineered Cartilage Tissue. *Journal of Medical Devices, Transactions of the ASME*, **2012**, 6,	1.3	8
20	Stabilization of Fibronectin by Random Copolymer Brushes Inhibits Macrophage Activation.. *ACS Applied Bio Materials*, **2019**, 2, 4698-4702	4.1	8
19	Microscale Photopatterning of Through-thickness Modulus in a Monolithic and Functionally Graded 3D Printed Part. *Small Science*, **2021**, 1, 2000017		8
18	Tethering transforming growth factor to soft hydrogels guides vascular smooth muscle commitment from human mesenchymal stem cells. *Acta Biomaterialia*, **2020**, 105, 68-77	10.8	7
17	Cytocompatibility and Cellular Internalization of PEGylated "Clickable" Nucleic Acid Oligomers. *Biomacromolecules*, **2018**, 19, 2535-2541	6.9	7
16	Influence of chondrocyte maturation on acute response to impact injury in PEG hydrogels. *Journal of Biomechanics*, **2012**, 45, 2556-63	2.9	7
15	Mechanobiological Interactions between Dynamic Compressive Loading and Viscoelasticity on Chondrocytes in Hydrazone Covalent Adaptable Networks for Cartilage Tissue Engineering. *Advanced Healthcare Materials*, **2021**, 10, e2002030	10.1	7
14	Mechanics of 3D Cell-Hydrogel Interactions: Experiments, Models, and Mechanisms. *Chemical Reviews*, **2021**, 121, 11085-11148	68.1	6
13	Photo-tunable hydrogel mechanical heterogeneity informed by predictive transport kinetics model. *Soft Matter*, **2020**, 16, 4131-4141	3.6	4
12	Messenger RNA enrichment using synthetic oligo(T) click nucleic acids. *Chemical Communications*, **2020**, 56, 13987-13990	5.8	4
11	The Effects of Stably Tethered BMP-2 on MC3T3-E1 Preosteoblasts Encapsulated in a PEG Hydrogel. *Biomacromolecules*, **2021**, 22, 1065-1079	6.9	3
10	Biomimetic and mechanically supportive 3D printed scaffolds for cartilage and osteochondral tissue engineering using photopolymers and digital light processing. *Biofabrication*, **2021**, 13,	10.5	3
9	Assessment and prevention of cartilage degeneration surrounding a focal chondral defect in the porcine model. *Biochemical and Biophysical Research Communications*, **2019**, 514, 940-945	3.4	2
8	Spatiotemporal neocartilage growth in matrix-metalloproteinase-sensitive poly(ethylene glycol) hydrogels under dynamic compressive loading: an experimental and computational approach. *Journal of Materials Chemistry B*, **2020**, 8, 2775-2791	7.3	2
7	A 3D, Dynamically Loaded Hydrogel Model of the Osteochondral Unit to Study Osteocyte Mechanobiology. *Advanced Healthcare Materials*, **2020**, 9, e2001226	10.1	2
6	Rabbit Model of Physeal Injury for the Evaluation of Regenerative Medicine Approaches. *Tissue Engineering - Part C: Methods*, **2019**, 25, 701-710	2.9	2

5	Physiological osmolarities do not enhance long-term tissue synthesis in chondrocyte-laden degradable poly(ethylene glycol) hydrogels. *Journal of Biomedical Materials Research - Part A*, **2015**, 103, 2186-92	5.4	1
4	Hydrolytically Degradable Poly(□amino ester) Resins with Tunable Degradation for 3D Printing by Projection Micro-Stereolithography. *Advanced Functional Materials*,2106509	15.6	1
3	The effects of processing variables on electrospun poly(ethylene glycol) fibrous hydrogels formed from the thiol-norbornene click reaction. *Journal of Applied Polymer Science*, **2021**, 138, 50786	2.9	1
2	Synthesis and Characterization of Click Nucleic Acid Conjugated Polymeric Microparticles for DNA Delivery Applications. *Biomacromolecules*, **2021**, 22, 1127-1136	6.9	1
1	Mapping Macrophage Polarization and Origin during the Progression of the Foreign Body Response to a Poly(ethylene glycol) Hydrogel Implant.. *Advanced Healthcare Materials*, **2021**, e2102209	10.1	0