Stephanie J Bryant

List of Publications by Year
in descending order

113 papers	9,897 citations	61984 43 h-index	36028 97 g-index
113 all docs	113 docs citations	113 times ranked	10258 citing authors

#	Article	IF	Citations
1	Biomaterials: Where We Have Been and Where We Are Going. Annual Review of Biomedical Engineering, 2004, 6, 41-75.	12.3	1,318
2	Cell Encapsulation in Biodegradable Hydrogels for Tissue Engineering Applications. Tissue Engineering - Part B: Reviews, 2008, 14, 149-165.	4.8	1,019
3	Hydrogel properties influence ECM production by chondrocytes photoencapsulated in poly(ethylene) Tj ETQq1 1 0.784314 rgBT /Overlo	3.1	743
4	Cytocompatibility of UV and visible light photoinitiating systems on cultured NIH/3T3 fibroblasts in vitro. Journal of Biomaterials Science, Polymer Edition, 2000, 11, 439-457.	3.5	674
5	In situ forming degradable networks and their application in tissue engineering and drug delivery. Journal of Controlled Release, 2002, 78, 199-209.	9.9	430
6	Controlling the spatial distribution of ECM components in degradable PEG hydrogels for tissue engineering cartilage. Journal of Biomedical Materials Research Part B, 2003, 64A, 70-79.	3.1	395
7	Student award winner in the undergraduate category for the society of biomaterials 9th World Biomaterials Congress, Chengdu, China, June 1â€“5, 2012. Journal of Biomedical Materials Research - Part A, 2012, 100A, 1375-1386.	4.0	367
8	Encapsulating chondrocytes in degrading PEG hydrogels with high modulus: Engineering gel structural changes to facilitate cartilaginous tissue production. Biotechnology and Bioengineering, 2004, 86, 747-755.	3.3	271
9	Tailoring the Degradation of Hydrogels Formed from Multivinyl Poly(ethylene glycol) and Poly(vinyl) Tj ETQq1 1 0.784314 rgBT /Overlo	5.4	258
10	Photo-patterning of porous hydrogels for tissue engineering. Biomaterials, 2007, 28, 2978-2986.	11.4	242
11	Crosslinking Density Influences Chondrocyte Metabolism in Dynamically Loaded Photocrosslinked Poly(ethylene glycol) Hydrogels. Annals of Biomedical Engineering, 2004, 32, 407-417.	2.5	212
12	Synthesis and Characterization of Photopolymerized Multifunctional Hydrogels:Â Water-Soluble Poly(Vinyl Alcohol) and Chondroitin Sulfate Macromers for Chondrocyte Encapsulation. Macromolecules, 2004, 37, 6726-6733.	4.8	173
13	Crosslinking density influences the morphology of chondrocytes photoencapsulated in PEG hydrogels during the application of compressive strain. Journal of Orthopaedic Research, 2004, 22, 1143-1149.	2.3	169
14	Manipulations in hydrogel chemistry control photoencapsulated chondrocyte behavior and their extracellular matrix production. Journal of Biomedical Materials Research - Part A, 2003, 67A, 1430-1436.	4.0	139
15	Comparison of photopolymerizable thiol-ene PEG and acrylate-based PEG hydrogels for cartilage development. Biomaterials, 2013, 34, 9969-9979.	11.4	138
16	Linking the foreign body response and protein adsorption to PEG-based hydrogels using proteomics. Biomaterials, 2015, 41, 26-36.	11.4	129
17	Immunomodulation by mesenchymal stem cells combats the foreign body response to cell-laden synthetic hydrogels. Biomaterials, 2015, 41, 79-88.	11.4	122
18	Characterization of the <i>in vitro</i> macrophage response and <i>in vivo</i> host response to poly(ethylene glycol)â€based hydrogels. Journal of Biomedical Materials Research - Part A, 2010, 93A, 941-953.	4.0	120

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19	Incorporation of tissue-specific molecules alters chondrocyte metabolism and gene expression in photocrosslinked hydrogels. Acta Biomaterialia, 2005, 1, 243-252.	8.3	110
20	Understanding and Improving Mechanical Properties in 3D printed Parts Using a Dualâ€Cure Acrylateâ€Based Resin for Stereolithography. Advanced Engineering Materials, 2018, 20, 1800876.	3.5	100
21	Mechanical loading regulates human MSC differentiation in a multi-layer hydrogel for osteochondral tissue engineering. Acta Biomaterialia, 2015, 21, 142-153.	8.3	94
22	Zwitterionic PEG-PC Hydrogels Modulate the Foreign Body Response in a Modulus-Dependent Manner. Biomacromolecules, 2018, 19, 2880-2888.	5.4	74
23	An Enzymeâ€Sensitive PEG Hydrogel Based on Aggrecan Catabolism for Cartilage Tissue Engineering. Advanced Healthcare Materials, 2015, 4, 420-431.	7.6	71
24	Designing 3D Photopolymer Hydrogels to Regulate Biomechanical Cues and Tissue Growth for Cartilage Tissue Engineering. Pharmaceutical Research, 2008, 25, 2379-2386.	3.5	70
25	Temporal progression of the host response to implanted poly(ethylene glycol)â€based hydrogels. Journal of Biomedical Materials Research - Part A, 2011, 96A, 621-631.	4.0	70
26	Cellâ€"matrix interactions and dynamic mechanical loading influence chondrocyte gene expression and bioactivity in PEG-RGD hydrogels. Acta Biomaterialia, 2009, 5, 2832-2846.	8.3	67
27	Tuning tissue growth with scaffold degradation in enzyme-sensitive hydrogels: a mathematical model. Soft Matter, 2016, 12, 7505-7520.	2.7	63
28	Programmable Hydrogels for Cell Encapsulation and Neoâ€Tissue Growth to Enable Personalized Tissue Engineering. Advanced Healthcare Materials, 2018, 7, 1700605.	7.6	63
29	Comparative study of the viscoelastic mechanical behavior of agarose and poly(ethylene glycol) hydrogels. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2011, 99B, 158-169.	3.4	62
30	Mechanics of 3D Cellâ€"Hydrogel Interactions: Experiments, Models, and Mechanisms. Chemical Reviews, 2021, 121, 11085-11148.	47.7	62
31	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, 3829-3840.	8.3	59
32	Nondestructive evaluation of a new hydrolytically degradable and photo-clickable PEG hydrogel for cartilage tissue engineering. Acta Biomaterialia, 2016, 39, 1-11.	8.3	58
33	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.	11.4	56
34	Semi-interpenetrating networks of hyaluronic acid in degradable PEG hydrogels for cartilage tissue engineering. Acta Biomaterialia, 2014, 10, 3409-3420.	8.3	55
35	Dynamic loading stimulates chondrocyte biosynthesis when encapsulated in charged hydrogels prepared from poly(ethylene glycol) and chondroitin sulfate. Matrix Biology, 2010, 29, 51-62.	3.6	54
36	Degradation Improves Tissue Formation in (Un)Loaded Chondrocyte-laden Hydrogels. Clinical Orthopaedics and Related Research, 2011, 469, 2725-2734.	1.5	54

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37	Indentation mapping revealed poroelastic, but not viscoelastic, properties spanning native zonal articular cartilage. Acta Biomaterialia, 2017, 64, 41-49.	8.3	51
38	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.	3.1	50
39	Tissue Engineering Approaches to Cell-Based Type 1 Diabetes Therapy. Tissue Engineering - Part B: Reviews, 2014, 20, 455-467.	4.8	50
40	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 Î²3. Acta Biomaterialia, 2019, 93, 97-110.	8.3	49
41	Heterogeneity is key to hydrogel-based cartilage tissue regeneration. Soft Matter, 2017, 13, 4841-4855.	2.7	47
42	Presence of pores and hydrogel composition influence tensile properties of scaffolds fabricated from wellâ€defined sphere templates. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2011, 96B, 294-302.	3.4	46
43	Mechanical stimulation of TMJ condylar chondrocytes encapsulated in PEG hydrogels. Journal of Biomedical Materials Research - Part A, 2007, 83A, 323-331.	4.0	45
44	Influence of ECM proteins and their analogs on cells cultured on 2-D hydrogels for cardiac muscle tissue engineering. Acta Biomaterialia, 2009, 5, 2929-2938.	8.3	45
45	Phenotypic changes in bone marrow-derived murine macrophages cultured on PEG-based hydrogels activated or not by lipopolysaccharide. Acta Biomaterialia, 2011, 7, 123-132.	8.3	44
46	Chondroitin sulfate and dynamic loading alter chondrogenesis of human MSCs in PEG hydrogels. Biotechnology and Bioengineering, 2012, 109, 2671-2682.	3.3	43
47	A Stereolithographyâ€Based 3D Printed Hybrid Scaffold for In Situ Cartilage Defect Repair. Macromolecular Bioscience, 2018, 18, 1700267.	4.1	43
48	The In Vitro and In Vivo Response to MMP-Sensitive Poly(Ethylene Glycol) Hydrogels. Annals of Biomedical Engineering, 2016, 44, 1959-1969.	2.5	42
49	Tuning Reaction and Diffusion Mediated Degradation of Enzymeâ€Sensitive Hydrogels. Advanced Healthcare Materials, 2016, 5, 432-438.	7.6	38
50	Alignment of multi-layered muscle cells within three-dimensional hydrogel macrochannels. Acta Biomaterialia, 2012, 8, 2193-2202.	8.3	35
51	Interaction of Hyaluronan Binding Peptides with Glycosaminoglycans in Poly(ethylene glycol) Hydrogels. Biomacromolecules, 2014, 15, 1132-1141.	5.4	34
52	Regenerative Medicine Approaches for the Treatment of Pediatric Physeal Injuries. Tissue Engineering - Part B: Reviews, 2018, 24, 85-97.	4.8	34
53	The host response in tissue engineering: Crosstalk between immune cells and cell-laden scaffolds. Current Opinion in Biomedical Engineering, 2018, 6, 58-65.	3.4	33
54	Understanding the host response to cell-laden poly(ethylene glycol)-based hydrogels. Biomaterials, 2013, 34, 952-964.	11.4	30

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55	Determination of the polymer-solvent interaction parameter for PEG hydrogels in water: Application of a self learning algorithm. Polymer, 2015, 66, 135-147.	3.8	30
56	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, 103-110.	8.3	30
57	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.	3.3	30
58	Crossâ€linking density alters early metabolic activities in chondrocytes encapsulated in poly(ethylene) Tj ETQq0 0 0 rgBT /Overlock 10 T 102, 1242-1250.	3.3	27
59	Cell encapsulation spatially alters crosslink density of poly(ethylene glycol) hydrogels formed from free-radical polymerizations. Acta Biomaterialia, 2020, 109, 37-50.	8.3	27
60	Triphasic mixture model of cell-mediated enzymatic degradation of hydrogels. Computer Methods in Biomechanics and Biomedical Engineering, 2012, 15, 1197-1210.	1.6	26
61	A photoclickable peptide microarray platform for facile and rapid screening of 3-D tissue microenvironments. Biomaterials, 2017, 143, 17-28.	11.4	26
62	Biomimetic soft fibrous hydrogels for contractile and pharmacologically responsive smooth muscle. Acta Biomaterialia, 2018, 74, 121-130.	8.3	26
63	Biomimetic and mechanically supportive 3D printed scaffolds for cartilage and osteochondral tissue engineering using photopolymers and digital light processing. Biofabrication, 2021, 13, 044106.	7.1	26
64	Current and novel injectable hydrogels to treat focal chondral lesions: Properties and applicability. Journal of Orthopaedic Research, 2018, 36, 64-75.	2.3	25
65	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.	8.3	25
66	Dynamic compressive loading differentially regulates chondrocyte anabolic and catabolic activity with age. Biotechnology and Bioengineering, 2013, 110, 2046-2057.	3.3	24
67	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.	5.4	24
68	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.	4.2	24
69	Characterization of the chondrocyte secretome in photoclickable poly(ethylene glycol) hydrogels. Biotechnology and Bioengineering, 2017, 114, 2096-2108.	3.3	22
70	In vitro and in vivo models for assessing the host response to biomaterials. Drug Discovery Today: Disease Models, 2017, 24, 13-21.	1.2	22
71	Age impacts extracellular matrix metabolism in chondrocytes encapsulated in degradable hydrogels. Biomedical Materials (Bristol), 2012, 7, 024111.	3.3	21
72	Three dimensional live cell lithography. Optics Express, 2013, 21, 10269.	3.4	21

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73	Prostaglandin E2 and Its Receptor EP2 Modulate Macrophage Activation and Fusion <i>in Vitro</i>. ACS Biomaterials Science and Engineering, 2020, 6, 2668-2681.	5.2	21
74	Incorporation of biomimetic matrix molecules in PEG hydrogels enhances matrix deposition and reduces loadâ€induced loss of chondrocyteâ€secreted matrix. Journal of Biomedical Materials Research - Part A, 2011, 97A, 281-291.	4.0	20
75	Mechanical characterization of sequentially layered photo-clickable thiol-ene hydrogels. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 65, 454-465.	3.1	20
76	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.	8.3	20
77	A MMP7â€sensitive photoclickable biomimetic hydrogel for MSC encapsulation towards engineering human cartilage. Journal of Biomedical Materials Research - Part A, 2018, 106, 2344-2355.	4.0	20
78	Stereolithographic 3D Printing for Deterministic Control over Integration in Dualâ€Material Composites. Advanced Materials Technologies, 2019, 4, 1900592.	5.8	20
79	<sup />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.	3.1	19
80	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.	2.1	18
81	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.	4.6	18
82	Local Heterogeneities Improve Matrix Connectivity in Degradable and Photoclickable Poly(ethylene) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5 2017, 3, 2480-2492.	5.2	17
83	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, 3037-3048.	3.1	16
84	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.	7.6	16
85	Ionic osmolytes and intracellular calcium regulate tissue production in chondrocytes cultured in a 3D charged hydrogel. Matrix Biology, 2014, 40, 17-26.	3.6	15
86	A comparison of human mesenchymal stem cell osteogenesis in poly(ethylene glycol) hydrogels as a function of MMPâ€sensitive crosslinker and crosslink density in chemically defined medium. Biotechnology and Bioengineering, 2019, 116, 1523-1536.	3.3	15
87	Viscoelasticity of hydrazone crosslinked poly(ethylene glycol) hydrogels directs chondrocyte morphology during mechanical deformation. Biomaterials Science, 2020, 8, 3804-3811.	5.4	15
88	â€˜The role of percolation in hydrogel-based tissue engineering and bioprintingâ€™. Current Opinion in Biomedical Engineering, 2020, 15, 68-74.	3.4	15
89	Photopolymerization of Hydrogel Scaffolds. , 2005, , 71-90.		14
90	Recapitulating the Micromechanical Behavior of Tension and Shear in a Biomimetic Hydrogel for Controlling Tenocyte Response. Advanced Healthcare Materials, 2017, 6, 1601095.	7.6	14

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91	Stabilization of Fibronectin by Random Copolymer Brushes Inhibits Macrophage Activation. ACS Applied Bio Materials, 2019, 2, 4698-4702.	4.6	14
92	Microscale Photopatterning of Throughâ€Thickness Modulus in a Monolithic and Functionally Graded 3Dâ€Printed Part. Small Science, 2021, 1, 2000017.	9.9	14
93	The Effects of Stably Tethered BMP-2 on MC3T3-E1 Preosteoblasts Encapsulated in a PEG Hydrogel. Biomacromolecules, 2021, 22, 1065-1079.	5.4	14
94	Particulate ECM biomaterial ink is 3D printed and naturally crosslinked to form structurally-layered and lubricated cartilage tissue mimics. Biofabrication, 2022, 14, 025021.	7.1	13
95	Characterization of a Novel Fiber Composite Material for Mechanotransduction Research of Fibrous Connective Tissues. Advanced Functional Materials, 2010, 20, 738-747.	14.9	12
96	A 3D, Dynamically Loaded Hydrogel Model of the Osteochondral Unit to Study Osteocyte Mechanobiology. Advanced Healthcare Materials, 2020, 9, e2001226.	7.6	12
97	Viscoelastic and thermoreversible networks crosslinked by non-covalent interactions between â€œclickableâ€•nucleic acid oligomers and DNA. Polymer Chemistry, 2020, 11, 2959-2968.	3.9	12
98	Hydrolytically Degradable Poly(Î²â€amino ester) Resins with Tunable Degradation for 3D Printing by Projection Microâ€Stereolithography. Advanced Functional Materials, 2022, 32, 2106509.	14.9	12
99	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.	2.7	11
100	Tethering transforming growth factor Î²1 to soft hydrogels guides vascular smooth muscle commitment from human mesenchymal stem cells. Acta Biomaterialia, 2020, 105, 68-77.	8.3	11
101	Messenger RNA enrichment using synthetic oligo(T) click nucleic acids. Chemical Communications, 2020, 56, 13987-13990.	4.1	10
102	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, .	0.7	9
103	Structural Modeling of Mechanosensitivity in Non-Muscle Cells: Multiscale Approach to Understand Cell Sensing. ACS Biomaterials Science and Engineering, 2017, 3, 2934-2942.	5.2	8
104	Cytocompatibility and Cellular Internalization of PEGylated â€œClickableâ€•Nucleic Acid Oligomers. Biomacromolecules, 2018, 19, 2535-2541.	5.4	8
105	Influence of chondrocyte maturation on acute response to impact injury in PEG hydrogels. Journal of Biomechanics, 2012, 45, 2556-2563.	2.1	7
106	Rabbit Model of Physeal Injury for the Evaluation of Regenerative Medicine Approaches. Tissue Engineering - Part C: Methods, 2019, 25, 701-710.	2.1	7
107	Photo-tunable hydrogel mechanical heterogeneity informed by predictive transport kinetics model. Soft Matter, 2020, 16, 4131-4141.	2.7	7
108	Synthesis and Characterization of Click Nucleic Acid Conjugated Polymeric Microparticles for DNA Delivery Applications. Biomacromolecules, 2021, 22, 1127-1136.	5.4	7

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109	Mapping Macrophage Polarization and Origin during the Progression of the Foreign Body Response to a Poly(ethylene glycol) Hydrogel Implant. Advanced Healthcare Materials, 2022, 11, e2102209.	7.6	7
110	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.	5.8	6
111	Assessment and prevention of cartilage degeneration surrounding a focal chondral defect in the porcine model. Biochemical and Biophysical Research Communications, 2019, 514, 940-945.	2.1	4
112	The effects of processing variables on electrospun poly(ethylene glycol) fibrous hydrogels formed from the thiolâ€norbornene click reaction. Journal of Applied Polymer Science, 2021, 138, 50786.	2.6	2
113	Physiological osmolarities do not enhance longâ€term tissue synthesis in chondrocyteâ€laden degradable poly(ethylene glycol) hydrogels. Journal of Biomedical Materials Research - Part A, 2015, 103, 2186-2192.	4.0	1