Craig A Simmons

List of Publications by Year
in descending order

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181 papers	10,315 citations	29994 54 h-index	38300 95 g-index
193 all docs	193 docs citations	193 times ranked	12870 citing authors

#	ARTICLE	IF	CITATIONS
1	Ascending aortic aneurysm haemodynamics are associated with aortic wall biomechanical properties. European Journal of Cardio-thoracic Surgery, 2022, 61, 367-375.	0.6	7
2	Rapid assembly of PMMA microfluidic devices with PETE membranes for studying the endothelium. Sensors and Actuators B: Chemical, 2022, 356, 131342.	4.0	10
3	In Vitro Matured Human Pluripotent Stem Cellâ€“Derived Cardiomyocytes Form Grafts With Enhanced Structure and Function in Injured Hearts. Circulation, 2022, 145, 1412-1426.	1.6	42
4	A guide for assessment of myocardial stiffness in health and disease. , 2022, 1, 8-22.		21
5	Microengineered platforms for characterizing the contractile function of in vitro cardiac models. Microsystems and Nanoengineering, 2022, 8, 26.	3.4	19
6	Searching for a physiologically meaningful parameter for aortic biomechanics â€“ is Energy Loss the way?. JTCVS Open, 2022, , .	0.2	1
7	An SCPPPQ1/LAM332 protein complex enhances the adhesion and migration of oral epithelial cells: Implications for dentogingival regeneration. Acta Biomaterialia, 2022, 147, 209-220.	4.1	3
8	Design of a Mechanobioreactor to Apply Anisotropic, Biaxial Strain to Large Thin Biomaterials for Tissue Engineered Heart Valve Applications. Annals of Biomedical Engineering, 2022, 50, 1073-1089.	1.3	5
9	A Carbon-Based Biosensing Platform for Simultaneously Measuring the Contraction and Electrophysiology of iPSC-Cardiomyocyte Monolayers. ACS Nano, 2022, 16, 11278-11290.	7.3	15
10	Hearts by design. Science, 2022, 377, 148-150.	6.0	1
11	A microdevice platform for characterizing the effect of mechanical strain magnitudes on the maturation of iPSC-Cardiomyocytes. Biosensors and Bioelectronics, 2021, 175, 112875.	5.3	26
12	Stretch-boosted cell-mediated vascularization. Nature Biomedical Engineering, 2021, 5, 6-7.	11.6	4
13	Porcine Umbilical Cord Perivascular Cells for Preclinical Testing of Tissue-Engineered Heart Valves. Tissue Engineering - Part C: Methods, 2021, 27, 35-46.	1.1	6
14	Assessment of fibrin-collagen co-gels for generating microvessels ex vivo using endothelial cell-lined microfluidics and multipotent stromal cell (MSC)-induced capillary morphogenesis. Biomedical Materials (Bristol), 2021, 16, 035005.	1.7	5
15	The focal mechanical properties of normal and diseased porcine aortic valve tissue measured by a novel microindentation device. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 115, 104245.	1.5	0
16	Combinatorial screen of dynamic mechanical stimuli for predictive control of MSC mechano-responsiveness. Science Advances, 2021, 7, .	4.7	13
17	Recent Progress Toward Clinical Translation of Tissue-Engineered Heart Valves. Canadian Journal of Cardiology, 2021, 37, 1064-1077.	0.8	26
18	The Mechanobiology of Endothelial-to-Mesenchymal Transition in Cardiovascular Disease. Frontiers in Physiology, 2021, 12, 734215.	1.3	23

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19	Dependency of energy loss on strain rate, strain magnitude and preload: Towards development of a novel biomarker for aortic aneurysm dissection risk. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 124, 104736.	1.5	8
20	Mitigating the non-specific uptake of immunomagnetic microparticles enables the extraction of endothelium from human fat. Communications Biology, 2021, 4, 1205.	2.0	5
21	Integrated electrochemical measurement of endothelial permeability in a 3D hydrogel-based microfluidic vascular model. Biosensors and Bioelectronics, 2020, 147, 111757.	5.3	44
22	Culture on Tissueâ€Specific Coatings Derived from Î±â€Amylaseâ€Digested Decellularized Adipose Tissue Enhances the Proliferation and Adipogenic Differentiation of Human Adiposeâ€Derived Stromal Cells. Biotechnology Journal, 2020, 15, 1900118.	1.8	9
23	The Implementation of an Adjustable Afterload Module for Ex Situ Heart Perfusion. Cardiovascular Engineering and Technology, 2020, 11, 96-110.	0.7	9
24	Paracrine signalling from monocytes enables desirable extracellular matrix accumulation and temporally appropriate phenotype of vascular smooth muscle cell-like cells derived from adipose stromal cells. Acta Biomaterialia, 2020, 103, 129-141.	4.1	11
25	The implementation of physiological afterload during ex situ heart perfusion augments prediction of posttransplant function. American Journal of Physiology - Heart and Circulatory Physiology, 2020, 318, H25-H33.	1.5	11
26	Primed Left Ventricle Heart Perfusion Creates Physiological Aortic Pressure in Porcine Hearts. ASAIO Journal, 2020, 66, 55-63.	0.9	4
27	Functional culture and in vitro genetic and small-molecule manipulation of adult mouse cardiomyocytes. Communications Biology, 2020, 3, 229.	2.0	8
28	Biomechanics of Aortic Dissection: A Comparison of Aortas Associated With Bicuspid and Tricuspid Aortic Valves. Journal of the American Heart Association, 2020, 9, e016715.	1.6	42
29	DDR1 (Discoidin Domain Receptor-1)-RhoA (Ras Homolog Family Member A) Axis Senses Matrix Stiffness to Promote Vascular Calcification. Arteriosclerosis, Thrombosis, and Vascular Biology, 2020, 40, 1763-1776.	1.1	24
30	Three-dimensional niche stiffness synergizes with Wnt7a to modulate the extent of satellite cell symmetric self-renewal divisions. Molecular Biology of the Cell, 2020, 31, 1703-1713.	0.9	26
31	Combinatorial extracellular matrix microarray identifies novel bioengineered substrates for xeno-free culture of human pluripotent stem cells. Biomaterials, 2020, 248, 120017.	5.7	23
32	Regulation of TAZ Expression by Cyclic Stretch. FASEB Journal, 2020, 34, 1-1.	0.2	0
33	Dynamic Bioreactors with Integrated Microfabricated Devices for Mechanobiological Screening. Tissue Engineering - Part C: Methods, 2019, 25, 581-592.	1.1	10
34	Nanoscale reorganization of sarcoplasmic reticulum in pressure-overload cardiac hypertrophy visualized by dSTORM. Scientific Reports, 2019, 9, 7867.	1.6	15
35	Modeling cardiac complexity: Advancements in myocardial models and analytical techniques for physiological investigation and therapeutic development <i>in vitro</i>. APL Bioengineering, 2019, 3, 011501.	3.3	11
36	Microfluidic assay for the on-chip electrochemical measurement of cell monolayer permeability. Lab on A Chip, 2019, 19, 1060-1070.	3.1	47

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37	B-Cell Deficiency Lowers Blood Pressure in Mice. Hypertension, 2019, 73, 561-570.	1.3	23
38	Deficiency of Natriuretic Peptide Receptor 2 Promotes Bicuspid Aortic Valves, Aortic Valve Disease, Left Ventricular Dysfunction, and Ascending Aortic Dilatations in Mice. Circulation Research, 2018, 122, 405-416.	2.0	42
39	Microdevice arrays with strain sensors for 3D mechanical stimulation and monitoring of engineered tissues. Biomaterials, 2018, 172, 30-40.	5.7	34
40	Generating vascular channels within hydrogel constructs using an economical open-source 3D bioprinter and thermoreversible gels. Bioprinting, 2018, 9, 7-18.	2.9	38
41	Differential Regulation of Extracellular Matrix Components Using Different Vitamin C Derivatives in Mono- and Coculture Systems. ACS Biomaterials Science and Engineering, 2018, 4, 3768-3778.	2.6	5
42	Alterations of MEK1/2-ERK1/2, IFNÎ³ and Smad2/3 associated Signalling pathways during cryopreservation of ASCs affect their differentiation towards VSMC-like cells. Stem Cell Research, 2018, 32, 115-125.	0.3	4
43	Mesenchymal Stromal/Stem Cells in Regenerative Medicine and Tissue Engineering. Stem Cells International, 2018, 2018, 1-16.	1.2	244
44	The Roles of Matrix Stiffness and ÃŸ-Catenin Signaling in Endothelial-to-Mesenchymal Transition of Aortic Valve Endothelial Cells. Cardiovascular Engineering and Technology, 2018, 9, 158-167.	0.7	69
45	Mechanical stability of the cell nucleus: roles played by the cytoskeleton in nuclear deformation and strain recovery. Journal of Cell Science, 2018, 131, .	1.2	64
46	The Requirement of B-cells for Renal and Blood Pressure Homeostasis. Atherosclerosis Supplements, 2018, 32, 108.	1.2	0
47	Influence of Cryopreservation on the Differentiation of Adipose Derived Stromal Cells Towards Vascular Smooth Muscle Cells. Atherosclerosis Supplements, 2018, 32, 143-144.	1.2	2
48	Editorial: Special Issue on Heart Valve Mechanobiology. Cardiovascular Engineering and Technology, 2018, 9, 121-125.	0.7	2
49	Taking bioengineered heart valves from faulty to functional. Nature, 2018, 559, 42-43.	13.7	4
50	Mechanical Strain-induced Reactive Oxygen Species and Their Role in Valve Interstitial Cell Calcification. Atherosclerosis Supplements, 2018, 32, 107.	1.2	0
51	Microdevice Platform for Continuous Measurement of Contractility, Beating Rate, and Beating Rhythm of Human-Induced Pluripotent Stem Cell-Cardiomyocytes inside a Controlled Incubator Environment. ACS Applied Materials & Interfaces, 2018, 10, 21173-21183.	4.0	35
52	Generating favorable growth factor and protease release profiles to enable extracellular matrix accumulation within an in vitro tissue engineering environment. Acta Biomaterialia, 2017, 54, 81-94.	4.1	13
53	Cell and Tissue Scale Forces Coregulate Fgfr2 -Dependent Tetrads and Rosettes in the Mouse Embryo. Biophysical Journal, 2017, 112, 2209-2218.	0.2	15
54	Combinatorial screening of 3D biomaterial properties that promote myofibrogenesis for mesenchymal stromal cell-based heart valve tissue engineering. Acta Biomaterialia, 2017, 58, 34-43.	4.1	24

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55	Could MRI Be Used To Image Kidney Fibrosis? A Review of Recent Advances and Remaining Barriers. Clinical Journal of the American Society of Nephrology: CJASN, 2017, 12, 1019-1028.	2.2	66
56	Tethered Jagged-1 Synergizes with Culture Substrate Stiffness to Modulate Notch-Induced Myogenic Progenitor Differentiation. Cellular and Molecular Bioengineering, 2017, 10, 501-513.	1.0	23
57	Deriving vascular smooth muscle cells from mesenchymal stromal cells: Evolving differentiation strategies and current understanding of their mechanisms. Biomaterials, 2017, 145, 9-22.	5.7	38
58	Computational analysis of integrated biosensing and shear flow in a microfluidic vascular model. AIP Advances, 2017, 7, 115116.	0.6	8
59	Microdevice arrays for identifying 3D mechanical stimulation conditions in tissue engineering. , 2017, , .		0
60	Positive-contrast cellular MRI of embryonic stem cells for tissue regeneration using a highly efficient<i>T</i>₁MRI contrast agent. Journal of Magnetic Resonance Imaging, 2016, 44, 1456-1463.	1.9	9
61	Heart valve regeneration: the need for systems approaches. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2016, 8, 169-182.	6.6	23
62	Biomechanics of Borrelia burgdorferi Vascular Interactions. Cell Reports, 2016, 16, 2593-2604.	2.9	48
63	Heart Valve Mechanobiology in Development and Disease. , 2016, , 255-276.		4
64	A microfabricated platform with on-chip strain sensing and hydrogel arrays for 3D mechanical stimulation of cells. , 2016, , .		2
65	A microfabricated platform with hydrogel arrays for 3D mechanical stimulation of cells. Acta Biomaterialia, 2016, 34, 113-124.	4.1	34
66	Biomechanical conditioning of tissue engineered heart valves: Too much of a good thing?. Advanced Drug Delivery Reviews, 2016, 96, 161-175.	6.6	55
67	Laser ablation to investigate cell and tissue mechanics in vivo. , 2015, , 128-147.		12
68	Human Pluripotent Stem Cell Mechanobiology: Manipulating the Biophysical Microenvironment for Regenerative Medicine and Tissue Engineering Applications. Stem Cells, 2015, 33, 3187-3196.	1.4	38
69	Bone cell mechanobiology using micro- and nano-techniques. , 2015, , 245-265.		2
70	Emerging Trends in Heart Valve Engineering: Part IV. Computational Modeling and Experimental Studies. Annals of Biomedical Engineering, 2015, 43, 2314-2333.	1.3	34
71	Study of the influence of actin-binding proteins using linear analyses of cell deformability. Soft Matter, 2015, 11, 5435-5446.	1.2	15
72	Immunomodulatory polymeric scaffold enhances extracellular matrix production in cell co-cultures under dynamic mechanical stimulation. Acta Biomaterialia, 2015, 24, 74-86.	4.1	36

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73	Anisotropic stress orients remodelling of mammalian limb bud ectoderm. Nature Cell Biology, 2015, 17, 569-579.	4.6	102
74	Polyacrylamide gel substrates that simulate the mechanical stiffness of normal and malignant neuronal tissues increase protoporphyin IX synthesis in glioma cells. Journal of Biomedical Optics, 2015, 20, 098002.	1.4	20
75	Interaction of a block-co-polymeric biomaterial with immunoglobulin G modulates human monocytes towards a non-inflammatory phenotype. Acta Biomaterialia, 2015, 24, 35-43.	4.1	20
76	Emerging Trends in Heart Valve Engineering: Part II. Novel and Standard Technologies for Aortic Valve Replacement. Annals of Biomedical Engineering, 2015, 43, 844-857.	1.3	52
77	Emerging Trends in Heart Valve Engineering: Part I. Solutions for Future. Annals of Biomedical Engineering, 2015, 43, 833-843.	1.3	80
78	Inelastic behaviour of collagen networks in cellâ€"matrix interactions and mechanosensation. Journal of the Royal Society Interface, 2015, 12, 20141074.	1.5	69
79	Emerging Trends in Heart Valve Engineering: Part III. Novel Technologies for Mitral Valve Repair and Replacement. Annals of Biomedical Engineering, 2015, 43, 858-870.	1.3	35
80	Mechanical and Matrix Regulation of Valvular Fibrosis. , 2015, , 23-53.		3
81	Mechanical characterization of cancer cell nuclei in situ. , 2014, , .		0
82	Microfabricated perfusable cardiac biowire: a platform that mimics native cardiac bundle. Lab on A Chip, 2014, 14, 869-882.	3.1	121
83	<i>In Situ</i> Mechanical Characterization of the Cell Nucleus by Atomic Force Microscopy. ACS Nano, 2014, 8, 3821-3828.	7.3	176
84	Monocyte/macrophage cytokine activity regulates vascular smooth muscle cell function within a degradable polyurethane scaffold. Acta Biomaterialia, 2014, 10, 1146-1155.	4.1	38
85	Evaluation of a porcine model of early aortic valve sclerosis. Cardiovascular Pathology, 2014, 23, 289-297.	0.7	32
86	Biophysical Characterization of Bladder Cancer Cells with Different Metastatic Potential. Cell Biochemistry and Biophysics, 2014, 68, 241-246.	0.9	47
87	Hemodynamic and Cellular Response Feedback in Calcific Aortic Valve Disease. Circulation Research, 2013, 113, 186-197.	2.0	102
88	A simple method to estimate the exponential material parameters of heart valve tissue based on analogy between uniaxial tension and micropipette aspiration. Biomechanics and Modeling in Mechanobiology, 2013, 12, 1283-1290.	1.4	3
89	Development of a three-dimensional in vitro model system to study orthodontic tooth movement. Archives of Oral Biology, 2013, 58, 1498-1510.	0.8	5
90	A 3D microfluidic platform incorporating methacrylated gelatin hydrogels to study physiological cardiovascular cellâ€"cell interactions. Lab on A Chip, 2013, 13, 2591.	3.1	126

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91	Determination of local and global elastic moduli of valve interstitial cells cultured on soft substrates. Journal of Biomechanics, 2013, 46, 1967-1971.	0.9	50
92	Mesenchymal stem cell mechanobiology and emerging experimental platforms. Journal of the Royal Society Interface, 2013, 10, 20130179.	1.5	120
93	Microdevice array-based identification of distinct mechanobiological response profiles in layer-specific valve interstitial cells. Integrative Biology (United Kingdom), 2013, 5, 673.	0.6	46
94	Design and formulation of functional pluripotent stem cell-derived cardiac microtissues. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E4698-707.	3.3	252
95	A Novel Device for the Microindentation of Soft Biomaterials With Application to Aortic Valve Leaflets. , 2013, , .		0
96	Characterization of the Elasticity of Valve Interstitial Cells on Soft Substrates Using Atomic Force Microscopy. , 2012, , .		1
97	Miniaturized platform with on-chip strain sensors for compression testing of arrayed materials. Lab on A Chip, 2012, 12, 4178.	3.1	18
98	An improved texture correlation algorithm to measure substrateâ€“cytoskeletal network strain transfer under large compressive strain. Journal of Biomechanics, 2012, 45, 76-82.	0.9	11
99	The elastic properties of valve interstitial cells undergoing pathological differentiation. Journal of Biomechanics, 2012, 45, 882-887.	0.9	59
100	Osteocyte apoptosis regulates osteoclast precursor adhesion via osteocytic IL-6 secretion and endothelial ICAM-1 expression. Bone, 2012, 50, 104-110.	1.4	64
101	Hydrogel Substrate Stiffness and Topography Interact to Induce Contact Guidance in Cardiac Fibroblasts. Macromolecular Bioscience, 2012, 12, 1342-1353.	2.1	42
102	A digital microfluidic platform for primary cell culture and analysis. Lab on A Chip, 2012, 12, 369-375.	3.1	89
103	Single Cell Deposition. Methods in Cell Biology, 2012, 112, 403-420.	0.5	1
104	Characterization of Early Porcine Aortic Valve Disease. , 2012, , .		0
105	Proteoglycan-Rich Leaflet Thickening in Diet-Induced Early Aortic Valve Disease. , 2012, , .		0
106	(Micro)managing the mechanical microenvironment. Integrative Biology (United Kingdom), 2011, 3, 959.	0.6	79
107	Cellâ€“Matrix Interactions in the Pathobiology of Calcific Aortic Valve Disease. Circulation Research, 2011, 108, 1510-1524.	2.0	248
108	The aortic valve microenvironment and its role in calcific aortic valve disease. Cardiovascular Pathology, 2011, 20, 177-182.	0.7	96

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109	Calcific Aortic Valve Disease: Not Simply a Degenerative Process. Circulation, 2011, 124, 1783-1791.	1.6	699
110	Animal Models of Calcific Aortic Valve Disease. International Journal of Inflammation, 2011, 2011, 1-18.	0.9	94
111	Lessons from (patho)physiological tissue stiffness and their implications for drug screening, drug delivery and regenerative medicine. Advanced Drug Delivery Reviews, 2011, 63, 269-276.	6.6	38
112	Osteocyte apoptosis is mechanically regulated and induces angiogenesis in vitro. Journal of Orthopaedic Research, 2011, 29, 523-530.	1.2	62
113	Measurement of layer-specific mechanical properties in multilayered biomaterials by micropipette aspiration. Acta Biomaterialia, 2011, 7, 1220-1227.	4.1	78
114	Functional characterization of human coronary artery smooth muscle cells under cyclic mechanical strain in a degradable polyurethane scaffold. Biomaterials, 2011, 32, 4816-4829.	5.7	66
115	Î²-Catenin Mediates Mechanically Regulated, Transforming Growth Factor-Î²1â€“Induced Myofibroblast Differentiation of Aortic Valve Interstitial Cells. Arteriosclerosis, Thrombosis, and Vascular Biology, 2011, 31, 590-597.	1.1	167
116	A microfluidic membrane device to mimic critical components of the vascular microenvironment. Biomicrofluidics, 2011, 5, 13409.	1.2	59
117	The use of material flow analysis and the ecological footprint in regional policy-making: application and insights from Northern Ireland. Local Environment, 2011, 16, 165-179.	1.1	12
118	Semi-confined compression of microfabricated polymerized biomaterial constructs. Journal of Micromechanics and Microengineering, 2011, 21, 054014.	1.5	14
119	Inhibition of Pathological Differentiation of Valvular Interstitial Cells by C-Type Natriuretic Peptide. Arteriosclerosis, Thrombosis, and Vascular Biology, 2011, 31, 1881-1889.	1.1	51
120	Microfabricated Platforms for Mechanically Dynamic Cell Culture. Journal of Visualized Experiments, 2010, , .	0.2	3
121	Boning up on Wolff's Law: Mechanical regulation of the cells that make and maintain bone. Journal of Biomechanics, 2010, 43, 108-118.	0.9	290
122	A study of vascular smooth muscle cell function under cyclic mechanical loading in a polyurethane scaffold with optimized porosity. Acta Biomaterialia, 2010, 6, 4218-4228.	4.1	46
123	Effects of Scleral Stiffness Properties on Optic Nerve Head Biomechanics. Annals of Biomedical Engineering, 2010, 38, 1586-1592.	1.3	63
124	An Undergraduate Lab (on-a-Chip): Probing Single Cell Mechanics on a Microfluidic Platform. Cellular and Molecular Bioengineering, 2010, 3, 319-330.	1.0	9
125	Influence of substrate stiffness on the phenotype of heart cells. Biotechnology and Bioengineering, 2010, 105, 1148-1160.	1.7	307
126	Biaxial mechanical testing of human sclera. Journal of Biomechanics, 2010, 43, 1696-1701.	0.9	114

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127	A microfabricated platform for high-throughput unconfined compression of micropatterned biomaterial arrays. Biomaterials, 2010, 31, 577-584.	5.7	101
128	Integration of statistical modeling and high-content microscopy to systematically investigate cellâ€“substrate interactions. Biomaterials, 2010, 31, 2489-2497.	5.7	57
129	A circular cross-section PDMS microfluidics system for replication of cardiovascular flow conditions. Biomaterials, 2010, 31, 3459-3464.	5.7	143
130	Single Cell Deposition and Patterning with a Robotic System. PLoS ONE, 2010, 5, e13542.	1.1	64
131	A micromanipulation system for single cell deposition. , 2010, , .		14
132	Microfabricated Devices for Studying Cellular Biomechanics and Mechanobiology. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2010, , 145-175.	0.7	4
133	Technique for Real-Time Measurements of Endothelial Permeability in a Microfluidic Membrane Chip Using Laser-Induced Fluorescence Detection. Analytical Chemistry, 2010, 82, 808-816.	3.2	86
134	Methylglyoxal-modified collagen promotes myofibroblast differentiation. Matrix Biology, 2010, 29, 537-548.	1.5	62
135	Macro- and microscale fluid flow systems for endothelial cell biology. Lab on A Chip, 2010, 10, 143-160.	3.1	184
136	Microfabricated arrays for high-throughput screening of cellular response to cyclic substrate deformation. Lab on A Chip, 2010, 10, 227-234.	3.1	129
137	Hydrogels modified with QHREDGS peptide support cardiomyocyte survival in vitro and after sub-cutaneous implantation. Soft Matter, 2010, 6, 5089.	1.2	31
138	Î²â€•Catenin mediates TGFâ€•Î²1â€•induced myofibroblast differentiation in a matrix stiffnessâ€•dependent manner: implication to aortic valve sclerosis. FASEB Journal, 2010, 24, 110.3.	0.2	0
139	The Effects of Cell Contraction and Loss of Adhesion on the Apoptosis of Valve Interstitial Cells. , 2010, , .		0
140	Molecular Markers of Early Orthodontic Tooth Movement. Angle Orthodontist, 2009, 79, 1108-1113.	1.1	44
141	A research agenda for improving national Ecological Footprint accounts. Ecological Economics, 2009, 68, 1991-2007.	2.9	239
142	Comparison of analytical and inverse finite element approaches to estimate cell viscoelastic properties by micropipette aspiration. Journal of Biomechanics, 2009, 42, 2768-2773.	0.9	50
143	Integrating polyurethane culture substrates into poly(dimethylsiloxane) microdevices. Biomaterials, 2009, 30, 5241-5250.	5.7	25
144	Aortic Valve Mechanics. Journal of the American College of Cardiology, 2009, 53, 1456-1458.	1.2	27

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145	Solving the shrinkage-induced PDMS alignment registration issue in multilayer soft lithography. Journal of Micromechanics and Microengineering, 2009, 19, 065015.	1.5	62
146	Augmenting microgel flow viareceptor-ligand binding in the constrained geometries of microchannels. Lab on A Chip, 2009, 9, 286-290.	3.1	16
147	Identification and Characterization of Aortic Valve Mesenchymal Progenitor Cells with Robust Osteogenic Calcification Potential. American Journal of Pathology, 2009, 174, 1109-1119.	1.9	187
148	Calcification by Valve Interstitial Cells Is Regulated by the Stiffness of the Extracellular Matrix. Arteriosclerosis, Thrombosis, and Vascular Biology, 2009, 29, 936-942.	1.1	294
149	Substrate architecture and fluid-induced shear stress during chondrocyte seeding: Role of Î±5Î²1 integrin. Biomaterials, 2008, 29, 2477-2489.	5.7	12
150	Simultaneous generation of droplets with different dimensions in parallel integrated microfluidic droplet generators. Soft Matter, 2008, 4, 258-262.	1.2	93
151	Precision patterning of PDMS membranes and applications. Journal of Micromechanics and Microengineering, 2008, 18, 037004.	1.5	37
152	Comparison of Three Material Models to Predict the Time-Dependent Deformation of a Single Cell Under Micropipette Aspiration. , 2008, , .		0
153	Regulation of valvular interstitial cell phenotype by matrix mechanics involves alphaâ€smooth muscle actin. FASEB Journal, 2008, 22, 174.5.	0.2	0
154	Mechanobiology of the aortic heart valve. Journal of Heart Valve Disease, 2008, 17, 62-73.	0.5	119
155	Techniques for isolating and purifying porcine aortic valve endothelial cells. Journal of Heart Valve Disease, 2008, 17, 674-81.	0.5	14
156	Methylglyoxal Inhibits the Binding Step of Collagen Phagocytosis. Journal of Biological Chemistry, 2007, 282, 8510-8520.	1.6	46
157	Matrix-dependent adhesion of vascular and valvular endothelial cells in microfluidic channels. Lab on A Chip, 2007, 7, 1759.	3.1	139
158	A50. Spatial transcriptional profiling of aortic valve interstitial cells. Journal of Molecular and Cellular Cardiology, 2006, 40, 901.	0.9	0
159	A127. Design of an in vitro microfluidic cell culture system to study aortic valve endothelial cells under shear stress. Journal of Molecular and Cellular Cardiology, 2006, 40, 901.	0.9	1
160	Effects of a bone-like mineral film on phenotype of adult human mesenchymal stem cells in vitro. Biomaterials, 2005, 26, 303-310.	5.7	86
161	Bone regeneration in a rat cranial defect with delivery of PEI-condensed plasmid DNA encoding for bone morphogenetic protein-4 (BMP-4). Gene Therapy, 2005, 12, 418-426.	2.3	182
162	Spatial Heterogeneity of Endothelial Phenotypes Correlates With Side-Specific Vulnerability to Calcification in Normal Porcine Aortic Valves. Circulation Research, 2005, 96, 792-799.	2.0	238

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163	Aortic Valve. Arteriosclerosis, Thrombosis, and Vascular Biology, 2004, 24, 1331-1333.	1.1	34
164	Mechanical stimulation and mitogen-activated protein kinase signaling independently regulate osteogenic differentiation and mineralization by calcifying vascular cells. Journal of Biomechanics, 2004, 37, 1531-1541.	0.9	36
165	Bone Regeneration <i>via</i> a Mineral Substrate and Induced Angiogenesis. Journal of Dental Research, 2004, 83, 204-210.	2.5	188
166	A Rapid, Reliable Method to Isolate High Quality Endothelial RNA from Small Spatially-Defined Locations. Annals of Biomedical Engineering, 2004, 32, 1453-1459.	1.3	18
167	Dual growth factor delivery and controlled scaffold degradation enhance in vivo bone formation by transplanted bone marrow stromal cells. Bone, 2004, 35, 562-569.	1.4	376
168	Cyclic strain enhances matrix mineralization by adult human mesenchymal stem cells via the extracellular signal-regulated kinase (ERK1/2) signaling pathway. Journal of Biomechanics, 2003, 36, 1087-1096.	0.9	274
169	Regulation of Cellular Response to Mechanical Signals by Matrix Design. , 2003, , 291-304.		2
170	Differences in osseointegration rate due to implant surface geometry can be explained by local tissue strains. Journal of Orthopaedic Research, 2001, 19, 187-194.	1.2	74
171	Mechanical regulation of localized and appositional bone formation around bone-interfacing implants. Journal of Biomedical Materials Research Part B, 2001, 55, 63-71.	3.0	52
172	Mechanical regulation of localized and appositional bone formation around boneâ€interfacing implants. Journal of Biomedical Materials Research Part B, 2001, 55, 63-71.	3.0	1
173	Osseointegration of sintered porous-surfaced and plasma spray-coated implants: An animal model study of early postimplantation healing response and mechanical stability. , 1999, 47, 127-138.		133
174	Method-Based Differences in the Automated Analysis of the Three-Dimensional Morphology of Trabecular Bone. Journal of Bone and Mineral Research, 1997, 12, 942-947.	3.1	73
175	Trabecular bone morphology from micro-magnetic resonance imaging. Journal of Bone and Mineral Research, 1996, 11, 286-292.	3.1	112
176	Three-dimensional anatomy of the cancellous structures within the proximal femur from computed tomography data. Journal of Orthopaedic Research, 1995, 13, 513-523.	1.2	30
177	The interstitium. , 0, , 240-249.		0
178	Micro- and nanotools to probe cancer cell mechanics and mechanobiology. , 0, , 169-185.		3
179	Microscale generation of dynamic forces in cell culture systems. , 0, , 47-68.		0
180	Study of tumor angiogenesis using microfluidic approaches. , 0, , 330-346.		0

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181	Mechanobiological stimulation of tissue engineered blood vessels. , 0, , 227-244.		1