

Beth L Pruitt

List of Publications by Year in descending order

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124
papers

6,740
citations

65103

42
h-index

70222

77
g-index

153
all docs

153
docs citations

153
times ranked

10588
citing authors

#	ARTICLE	IF	CITATIONS
1	Field Guide to Traction Force Microscopy. Cellular and Molecular Bioengineering, 2024, 17, 87-106.	2.1	1
2	Incomplete-penetrant hypertrophic cardiomyopathy <i>MYH7</i> G256E mutation causes hypercontractility and elevated mitochondrial respiration. Proceedings of the National Academy of Sciences of the United States of America, 2024, 121, .	7.6	0
3	Tracking single hiPSC-derived cardiomyocyte contractile function using CONTRAX an efficient pipeline for traction force measurement. Nature Communications, 2024, 15, .	13.2	0
4	Engineering tools for quantifying and manipulating forces in epithelia. Biophysics Reviews, 2023, 4, .	2.7	0
5	Equitable hiring strategies towards a diversified faculty. Nature Biomedical Engineering, 2023, 7, 961-968.	22.4	2
6	Improved Cardiac Performance and Decreased Arrhythmia in Hypertrophic Cardiomyopathy With Non-β-Blocking R-Enantiomer Carvedilol. Circulation, 2023, 148, 1691-1704.	9.3	1
7	The effects of xeno-free cryopreservation on the contractile properties of human iPSC derived cardiomyocytes. Journal of Molecular and Cellular Cardiology, 2022, 168, 107-114.	1.9	2
8	Independently paced Ca ²⁺ oscillations in progenitor and differentiated cells in an <i>ex vivo</i> epithelial organ. Journal of Cell Science, 2022, 135, .	2.1	5
9	Nucleation of the destruction complex on the centrosome accelerates degradation of β-catenin and regulates Wnt signal transmission. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.6	11
10	Morphological control enables nanometer-scale dissection of cell-cell signaling complexes. Nature Communications, 2022, 13, .	13.2	3
11	3D Microwell Platforms for Control of Single Cell 3D Geometry and Intracellular Organization. Cellular and Molecular Bioengineering, 2021, 14, 1-14.	2.1	4
12	CRISPR/Cas9-based targeting of fluorescent reporters to human iPSCs to isolate atrial and ventricular-specific cardiomyocytes. Scientific Reports, 2021, 11, 3026.	3.4	18
13	Hypertrophic cardiomyopathy β-cardiac myosin mutation (P710R) leads to hypercontractility by disrupting super relaxed state. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.6	55
14	An Easy-to-Fabricate Cell Stretcher Reveals Density-Dependent Mechanical Regulation of Collective Cell Movements in Epithelia. Cellular and Molecular Bioengineering, 2021, 14, 569-581.	2.1	9
15	Increased tissue stiffness triggers contractile dysfunction and telomere shortening in dystrophic cardiomyocytes. Stem Cell Reports, 2021, 16, 2169-2181.	4.7	30
16	Wafer-Scale Patterning of Protein Templates for Hydrogel Fabrication. Micromachines, 2021, 12, 1386.	3.0	0
17	Producing Collagen Micro-stripes with Aligned Fibers for Cell Migration Assays. Cellular and Molecular Bioengineering, 2020, 13, 87-98.	2.1	13
18	Silencing of <i>MYH7</i> ameliorates disease phenotypes in human iPSC-cardiomyocytes. Physiological Genomics, 2020, 52, 293-303.	2.3	34

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19	Micromechanobiology: Focusing on the Cardiac Cell–Substrate Interface. Annual Review of Biomedical Engineering, 2020, 22, 257-284.	12.4	13
20	Touch-induced mechanical strain in somatosensory neurons is independent of extracellular matrix mutations in <i>Caenorhabditis elegans</i> . Molecular Biology of the Cell, 2020, 31, 1735-1743.	2.5	6
21	Controlled phage therapy by photothermal ablation of specific bacterial species using gold nanorods targeted by chimeric phages. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1951-1961.	7.6	97
22	Mechanobiology Assays with Applications in Cardiomyocyte Biology and Cardiotoxicity. Advanced Healthcare Materials, 2020, 9, e1901656.	8.5	24
23	MEMS device for applying shear and tension to an epithelium combined with fluorescent live cell imaging. Journal of Micromechanics and Microengineering, 2020, 30, 125004.	2.6	5
24	Allele-Specific Silencing Ameliorates Restrictive Cardiomyopathy Attributable to a Human Myosin Regulatory Light Chain Mutation. Circulation, 2019, 140, 765-778.	9.3	32
25	Extracellular matrix micropatterning technology for whole cell cryogenic electron microscopy studies. Journal of Micromechanics and Microengineering, 2019, 29, 115018.	2.6	29
26	Using a Microfluidics Device for Mechanical Stimulation and High Resolution Imaging of <i>C. elegans</i> . Journal of Visualized Experiments, 2018, , .	0.3	14
27	Big bottlenecks in cardiovascular tissue engineering. Communications Biology, 2018, 1, 199.	4.5	71
28	Hierarchy of models for electrostatic comb-drive actuators in electrolytes. Journal of Micromechanics and Microengineering, 2018, 28, 125013.	2.6	1
29	Associations with Unprotected Sexual Behavior Among HIV-Infected Drinkers in Western Kenya. AIDS and Behavior, 2018, 22, 2840-2850.	2.9	2
30	Microfluidics for mechanobiology of model organisms. Methods in Cell Biology, 2018, 146, 217-259.	2.1	14
31	The tactile receptive fields of freely moving <i>Caenorhabditis elegans</i> nematodes. Integrative Biology (United Kingdom), 2018, 10, 450-463.	1.3	7
32	Controlling cell shape on hydrogels using lift-off protein patterning. PLoS ONE, 2018, 13, e0189901.	2.5	29
33	Shear-induced damped oscillations in an epithelium depend on actomyosin contraction and E-cadherin cell adhesion. ELife, 2018, 7, .	5.9	21
34	LOS COSTOS SOCIALES DE LOS DIÁLOGOS DE PAZ EN COLOMBIA. UNA MIRADA DESDE LA JUSTICIA DEL RESARCIMIENTO.. Telos: Revista Iberoamerica De Estudios Utilitaristas, 2018, 21, 9.	0.0	0
35	Pneumatic stimulation of <i>C. elegans</i> mechanoreceptor neurons in a microfluidic trap. Lab on A Chip, 2017, 17, 1116-1127.	6.1	61
36	Rise time reduction of thermal actuators operated in air and water through optimized pre-shaped open-loop driving. Journal of Micromechanics and Microengineering, 2017, 27, 045005.	2.6	1

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37	Multi-Imaging Method to Assay the Contractile Mechanical Output of Micropatterned Human iPSC-Derived Cardiac Myocytes. <i>Circulation Research</i> , 2017, 120, 1572-1583.	10.7	102
38	E-cadherin and LGN align epithelial cell divisions with tissue tension independently of cell shape. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E5845-E5853.	7.6	92
39	Changes in E-cadherin rigidity sensing regulate cell adhesion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E5835-E5844.	7.6	75
40	MEMS Enabled live cell mechanics and dynamics in shear loading. , 2017, , .		1
41	Forces applied during classical touch assays for <i>Caenorhabditis elegans</i> . <i>PLoS ONE</i> , 2017, 12, e0178080.	2.5	11
42	A BAG3 chaperone complex maintains cardiomyocyte function during proteotoxic stress. <i>JCI Insight</i> , 2017, 2, .	5.0	85
43	Disease Model of GATA4 Mutation Reveals Transcription Factor Cooperativity in Human Cardiogenesis. <i>Cell</i> , 2016, 167, 1734-1749.e22.	27.8	208
44	Tuning the Range of Polyacrylamide Gel Stiffness for Mechanobiology Applications. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 21893-21902.	8.3	243
45	Single Molecule Force Measurements in Living Cells Reveal a Minimally Tensioned Integrin State. <i>ACS Nano</i> , 2016, 10, 10745-10752.	15.3	109
46	Timeâ€dependent evolution of functional <i>ci</i> vs. <i>ci</i> remodeling signaling in induced pluripotent stem cellâ€derived cardiomyocytes and induced maturation with biomechanical stimulation. <i>FASEB Journal</i> , 2016, 30, 1464-1479.	0.5	63
47	For whom the cells pull: Hydrogel and micropost devices for measuring traction forces. <i>Methods</i> , 2016, 94, 51-64.	3.9	65
48	Self-sensing cantilevers with integrated conductive coaxial tips for high-resolution electrical scanning probe metrology. <i>Journal of Applied Physics</i> , 2015, 118, 034306.	2.3	4
49	Spatial distribution of cellâ€cell and cellâ€ECM adhesions regulates force balance while mainÂtaining E-cadherin molecular tension in cell pairs. <i>Molecular Biology of the Cell</i> , 2015, 26, 2456-2465.	2.5	80
50	Tissue mechanics govern the rapidly adapting and symmetrical response to touch. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E6955-63.	7.6	61
51	Oxidation stiffening of PDMS microposts. <i>Extreme Mechanics Letters</i> , 2015, 3, 17-23.	4.2	3
52	Multifunctional Integrated Sensors for Multiparameter Monitoring Applications. <i>Journal of Microelectromechanical Systems</i> , 2015, 24, 810-821.	2.7	25
53	Contractility of single cardiomyocytes differentiated from pluripotent stem cells depends on physiological shape and substrate stiffness. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 12705-12710.	7.6	416
54	Mechanotransduction: use the force(s). <i>BMC Biology</i> , 2015, 13, 47.	3.9	190

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55	Mechano-Transduction: From Molecules to Tissues. PLoS Biology, 2014, 12, e1001996.	5.4	75
56	Shielded piezoresistive cantilever probes for nanoscale topography and electrical imaging. Journal of Micromechanics and Microengineering, 2014, 24, 045026.	2.6	7
57	Stable, Covalent Attachment of Laminin to Microposts Improves the Contractility of Mouse Neonatal Cardiomyocytes. ACS Applied Materials & Interfaces, 2014, 6, 15516-15526.	8.3	31
58	Multifunctional integrated sensor in A 2×2 mm epitaxial sealed chip operating in a wireless sensor node. , 2014, , .		3
59	MEMS for cell mechanobiology. , 2014, , .		0
60	Integrated Multifunctional Environmental Sensors. Journal of Microelectromechanical Systems, 2013, 22, 779-793.	2.7	37
61	Spontaneous cardiomyocyte differentiation of mouse embryoid bodies regulated by hydrogel crosslink density. Biomaterials Science, 2013, 1, 1082.	5.5	32
62	MEMS-based force-clamp analysis of the role of body stiffness in <i>C. elegans</i> touch sensation. Integrative Biology (United Kingdom), 2013, 5, 853-864.	1.3	46
63	Formation of composite polyacrylamide and silicone substrates for independent control of stiffness and strain. Lab on A Chip, 2013, 13, 646.	6.1	52
64	Spatial patterning of endothelium modulates cell morphology, adhesiveness and transcriptional signature. Biomaterials, 2013, 34, 2928-2937.	11.8	58
65	The Yin-Yang of Rigidity Sensing: How Forces and Mechanical Properties Regulate the Cellular Response to Materials. Annual Review of Materials Research, 2013, 43, 589-618.	9.8	111
66	Nanomechanical Actuation of a Silicon Cantilever Using an Azo Dye, Self-Assembled Monolayer. Langmuir, 2013, 29, 7118-7124.	3.7	7
67	Microactuator device for integrated measurement of epithelium mechanics. Biomedical Microdevices, 2013, 15, 117-123.	3.0	13
68	Sacrificial layer technique for axial force post assay of immature cardiomyocytes. Biomedical Microdevices, 2013, 15, 171-181.	3.0	35
69	MEMS-based shear characterization of soft hydrated samples. Journal of Micromechanics and Microengineering, 2013, 23, 085001.	2.6	3
70	Spatially Resolved Study of Backscattering in the Quantum Spin Hall State. Physical Review X, 2013, 3, .	9.1	77
71	Integrated sensor cross-sensitivity analysis. , 2013, , .		5
72	Ultra-thin atomic layer deposition films for corrosion resistance. , 2013, , .		7

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73	Microsystems and functional assays for mechanobiology. , 2013, , .		0
74	Planar patterned stretchable electrode arrays based on flexible printed circuits. Journal of Micromechanics and Microengineering, 2013, 23, 105004.	2.6	12
75	High-bandwidth piezoresistive force probes with integrated thermal actuation. Journal of Micromechanics and Microengineering, 2012, 22, 095012.	2.6	20
76	Effects of Substrate Mechanics on Contractility of Cardiomyocytes Generated from Human Pluripotent Stem Cells. International Journal of Cell Biology, 2012, 2012, 1-13.	2.3	144
77	Faster than the Speed of Hearing: Nanomechanical Force Probes Enable the Electromechanical Observation of Cochlear Hair Cells. Nano Letters, 2012, 12, 6107-6111.	9.5	35
78	Microsystems for biomimetic stimulation of cardiac cells. Lab on A Chip, 2012, 12, 3235.	6.1	55
79	Hydrogel crosslinking density regulates temporal contractility of human embryonic stem cell-derived cardiomyocytes in 3D cultures. Soft Matter, 2012, 8, 10141.	2.8	58
80	E-cadherin is under constitutive actomyosin-generated tension that is increased at cell-cell contacts upon externally applied stretch. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 12568-12573.	7.6	530
81	Multi-functional integrated sensors for the environment. , 2012, , .		13
82	Low-impedance shielded tip piezoresistive probe enables portable Microwave Impedance Microscopy. , 2012, , .		0
83	Uniaxial cell stretcher enables high resolution live cell imaging. , 2012, , .		1
84	Caenorhabditis elegans Body Mechanics Are Regulated by Body Wall Muscle Tone. Biophysical Journal, 2011, 100, 1977-1985.	0.5	56
85	Tools for Studying Biomechanical Interactions in Cells. , 2011, , 233-265.		5
86	DEG/ENaC but Not TRP Channels Are the Major Mechanoelectrical Transduction Channels in a C.Ælegans Nociceptor. Neuron, 2011, 71, 845-857.	8.0	122
87	Piezoresistive cantilever force-clamp system. Review of Scientific Instruments, 2011, 82, 043703.	1.4	23
88	Integrated strain array for cellular mechanobiology studies. Journal of Micromechanics and Microengineering, 2011, 21, 054016.	2.6	62
89	Stretchable microelectrode array using room-temperature liquid alloy interconnects. Journal of Micromechanics and Microengineering, 2011, 21, 054015.	2.6	8
90	MEMS in biology and medicine. Journal of Micromechanics and Microengineering, 2011, 21, 050201-050201.	2.6	2

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91	Patterned cracks improve yield in the release of compliant microdevices from silicon-on-insulator wafers. <i>Journal of Micromechanics and Microengineering</i> , 2011, 21, 087001.	2.6	5
92	Self-heating in piezoresistive cantilevers. <i>Applied Physics Letters</i> , 2011, 98, 223103.	3.2	18
93	New Devices for Investigating Hair Cell Mechanical Properties. <i>AIP Conference Proceedings</i> , 2011, , .	1.0	0
94	The MEMS Design Process. <i>MEMS Reference Shelf</i> , 2011, , 1-36.	0.0	0
95	Optimization with process limits and application requirements for force sensors. , 2010, , .		2
96	Piezoresistive Cantilever Performanceâ€™Part II: Optimization. <i>Journal of Microelectromechanical Systems</i> , 2010, 19, 149-161.	2.7	47
97	Aluminum nitride on titanium for CMOS compatible piezoelectric transducers. <i>Journal of Micromechanics and Microengineering</i> , 2010, 20, 025008.	2.6	66
98	Microfabricated calibration tool for direct shear stiffness measurements with applications in cell mechanics. , 2010, , .		0
99	Design of piezoresistive versus piezoelectric contact mode scanning probes. <i>Journal of Micromechanics and Microengineering</i> , 2010, 20, 095023.	2.6	13
100	Role of surface roughness in hysteresis during adhesive elastic contact. <i>Philosophical Magazine Letters</i> , 2010, 90, 891-902.	1.2	65
101	Coaxial tip piezoresistive scanning probes with sub-nanometer vertical displacement resolution. , 2010, , .		6
102	Piezoresistive Cantilever Performanceâ€™Part I: Analytical Model for Sensitivity. <i>Journal of Microelectromechanical Systems</i> , 2010, 19, 137-148.	2.7	61
103	Force Sensing Optimization and Applications. <i>NATO Science for Peace and Security Series B: Physics and Biophysics</i> , 2010, , 287-298.	0.0	1
104	Design optimization of piezoresistive cantilevers for force sensing in air and water. <i>Journal of Applied Physics</i> , 2009, 106, 064310.	2.3	73
105	MEMS Electrostatic Actuation in Conducting Biological Media. <i>Journal of Microelectromechanical Systems</i> , 2009, 18, 405-413.	2.7	46
106	Piezoresistive Cantilever Optimization and Applications. <i>Materials Research Society Symposia Proceedings</i> , 2009, 1222, 1.	0.1	2
107	Review: Semiconductor Piezoresistance for Microsystems. <i>Proceedings of the IEEE</i> , 2009, 97, 513-552.	26.4	771
108	Modeling and characterization of electrostatic comb-drive actuators in conducting liquid media. <i>Journal of Micromechanics and Microengineering</i> , 2009, 19, 065008.	2.6	165

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109	SU-8 force sensing pillar arrays for biological measurements. Lab on A Chip, 2009, 9, 1449.	6.1	64
110	Modeling and validation of electrostatic actuation in aqueous ionic media. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	0
111	Microsystems for Biomechanical Measurements. Pediatric Research, 2008, 63, 576-583.	2.4	26
112	Artificial Dirt: Microfluidic Substrates for Nematode Neurobiology and Behavior. Journal of Neurophysiology, 2008, 99, 3136-3143.	1.9	166
113	Low 1 \hat{a} f noise, full bridge, microcantilever with longitudinal and transverse piezoresistors. Applied Physics Letters, 2008, 92, .	3.2	24
114	Biocompatible coatings for CMUTs in a harsh, aqueous environment. Journal of Micromechanics and Microengineering, 2007, 17, 994-1001.	2.6	35
115	Analysis of nematode mechanics by piezoresistive displacement clamp. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 17376-17381.	7.6	146
116	Vapor-Venting, Micromachined Heat Exchanger for Electronics Cooling. , 2007, , 951.		7
117	Design and characterization of microfabricated piezoresistive floating element-based shear stress sensors. Sensors and Actuators A: Physical, 2007, 134, 77-87.	4.2	76
118	Application of a Modified Quality Function Deployment Method for MEMS. , 2007, , .		3
119	Strain Transduction in Conductor-Modified Polymers. Materials Research Society Symposia Proceedings, 2005, 872, 1.	0.1	0
120	Design, Fabrication, and Characterization of Piezoresistive MEMS Shear Stress Sensors. , 2005, , 531.		3
121	Fundamental noise in MEMS force sensors. , 2004, , .		0
122	Piezoresistive cantilevers and measurement system for characterizing low force electrical contacts. Sensors and Actuators A: Physical, 2003, 104, 68-77.	4.2	46
123	Notes on the blood vessels of new growths, with especial reference to their origin in granulation tissue. Transactions of the Royal Academy of Medicine in Ireland, 1883, 1, .	0.1	0
124	Insights from an AIMBE Workshop: Diversifying Paths to Academic Leadership. Biomedical Engineering Education, 0, , .	0.8	0