

Elliot L Botvinick

List of Publications by Year in descending order

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67
papers

3,409
citations

218677

26
h-index

144013

57
g-index

67
all docs

67
docs citations

67
times ranked

5727
citing authors

#	ARTICLE	IF	CITATIONS
1	Transcutaneous Flexible Sensor for <i>In Vivo</i> Photonic Detection of pH and Lactate. ACS Sensors, 2022, 7, 441-452.	7.8	10
2	Patterned photocrosslinking to establish stiffness anisotropies in fibrous 3D hydrogels. Acta Biomaterialia, 2022, 141, 39-47.	8.3	10
3	Cell mediated remodeling of stiffness matched collagen and fibrin scaffolds. Scientific Reports, 2022, 12, .	3.3	5
4	Actively Driven Fluctuations in a Fibrin Network. Frontiers in Physics, 2021, 8, .	2.1	4
5	Single-shot interferometric measurement of cavitation bubble dynamics. Optics Letters, 2021, 46, 1409.	3.3	5
6	Clinical evaluation of a novel subcutaneous lactate monitor. Journal of Clinical Monitoring and Computing, 2021, , 1.	1.6	6
7	Topological defects produce kinks in biopolymer filament bundles. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	6
8	Cell contact guidance via sensing anisotropy of network mechanical resistance. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	28
9	Laser cavitation rheology for measurement of elastic moduli and failure strain within hydrogels. Scientific Reports, 2020, 10, 13144.	3.3	12
10	Dermal fibroblasts and triple-negative mammary epithelial cancer cells differentially stiffen their local matrix. APL Bioengineering, 2020, 4, 046105.	6.2	8
11	A bench-top model of middle ear effusion diagnosed with optical tympanometry. International Journal of Pediatric Otorhinolaryngology, 2020, 134, 110054.	1.0	0
12	Photostable and Proteolysis-Resistant Förster Resonance Energy Transfer-Based Calcium Biosensor. Analytical Chemistry, 2020, 92, 7683-7689.	6.5	3
13	Oxygen Monitor to Study Vascularization of Medical Devices. MRS Advances, 2020, 5, 991-1000.	0.9	0
14	Non-Invasive Monitoring of Oxygen Tension and Oxygen Transport Inside Subcutaneous Devices After H ₂ S Treatment. Cell Transplantation, 2020, 29, 096368971989393.	2.5	2
15	Microstructural characteristics of bijel-templated porous materials. Materialia, 2019, 7, 100393.	2.7	17
16	Selective stiffening of fibrin hydrogels with micron resolution via photocrosslinking. Acta Biomaterialia, 2019, 87, 88-96.	8.3	22
17	Bijel-templated implantable biomaterials for enhancing tissue integration and vascularization. Acta Biomaterialia, 2019, 94, 173-182.	8.3	27
18	Matrix crosslinking enhances macrophage adhesion, migration, and inflammatory activation. APL Bioengineering, 2019, 3, 016103.	6.2	58

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19	A pilot clinical trial of a near-infrared laser vaccine adjuvant: safety, tolerability, and cutaneous immune cell trafficking. <i>FASEB Journal</i> , 2019, 33, 3074-3081.	0.5	12
20	Composite Bijel-Templated Hydrogels for Cell Delivery. <i>ACS Biomaterials Science and Engineering</i> , 2018, 4, 587-594.	5.2	33
21	Sprouting angiogenesis induces significant mechanical heterogeneities and ECM stiffening across length scales in fibrin hydrogels. <i>Biomaterials</i> , 2018, 162, 99-108.	11.4	49
22	Visualization of Breast Cancer Metabolism Using Multimodal Nonlinear Optical Microscopy of Cellular Lipids and Redox State. <i>Cancer Research</i> , 2018, 78, 2503-2512.	0.9	24
23	High-Throughput Screening of Encapsulated Islets Using Wide-Field Lens-Free On-Chip Imaging. <i>ACS Photonics</i> , 2018, 5, 2081-2086.	6.6	8
24	Structural Characteristics and Diffusion Coefficient of Alginate Hydrogels Used for Cell Based Drug Delivery. <i>MRS Advances</i> , 2018, 3, 2399-2408.	0.9	11
25	Towards the Development of a Real-time Insulin Biosensor. <i>FASEB Journal</i> , 2018, 32, 657.9.	0.5	0
26	Vascularization and innervation of slits within polydimethylsiloxane sheets in the subcutaneous space of athymic nude mice. <i>Journal of Tissue Engineering</i> , 2017, 8, 204173141769164.	5.5	6
27	Spatial distributions of pericellular stiffness in natural extracellular matrices are dependent on cell-mediated proteolysis and contractility. <i>Acta Biomaterialia</i> , 2017, 57, 304-312.	8.3	47
28	Differential regulation of macrophage inflammatory activation by fibrin and fibrinogen. <i>Acta Biomaterialia</i> , 2017, 47, 14-24.	8.3	140
29	Recapitulating the human tumor microenvironment: Colon tumor-derived extracellular matrix promotes angiogenesis and tumor cell growth. <i>Biomaterials</i> , 2017, 116, 118-129.	11.4	88
30	Three-Dimensional Adult Cardiac Extracellular Matrix Promotes Maturation of Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes. <i>Tissue Engineering - Part A</i> , 2016, 22, 1016-1025.	3.1	109
31	Combination scaffolds of salmon fibrin, hyaluronic acid, and laminin for human neural stem cell and vascular tissue engineering. <i>Acta Biomaterialia</i> , 2016, 43, 122-138.	8.3	125
32	Evolution of Multivalent Nanoparticle Adhesion via Specific Molecular Interactions. <i>Langmuir</i> , 2016, 32, 13124-13136.	3.5	6
33	Novel insights from 3D models: the pivotal role of physical symmetry in epithelial organization. <i>Scientific Reports</i> , 2015, 5, 15153.	3.3	8
34	Molecular interference of fibrin's divalent polymerization mechanism enables modulation of multiscale material properties. <i>Biomaterials</i> , 2015, 49, 27-36.	11.4	27
35	Reply to 'Mechanism for microtsunami-induced intercellular mechanosignalling'. <i>Nature Photonics</i> , 2015, 9, 624-625.	31.4	2
36	Distinct mechanisms regulating mechanical force-induced Ca ²⁺ signals at the plasma membrane and the ER in human MSCs. <i>ELife</i> , 2015, 4, e04876.	6.0	90

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37	Method measuring oxygen tension and transport within subcutaneous devices. <i>Journal of Biomedical Optics</i> , 2014, 19, 087006.	2.6	14
38	High-throughput optical screening of cellular mechanotransduction. <i>Nature Photonics</i> , 2014, 8, 710-715.	31.4	36
39	Characterizing the Collagen Fiber Orientation in Pericardial Leaflets Under Mechanical Loading Conditions. <i>Annals of Biomedical Engineering</i> , 2013, 41, 547-561.	2.5	38
40	MT1-MMP-Dependent Control of Skeletal Stem Cell Commitment via a β 1-Integrin/YAP/TAZ Signaling Axis. <i>Developmental Cell</i> , 2013, 25, 402-416.	7.0	219
41	Adenosine A ₁ and Prostaglandin E Receptor 3 Receptors Mediate Global Airway Contraction after Local Epithelial Injury. <i>American Journal of Respiratory Cell and Molecular Biology</i> , 2013, 48, 299-305.	2.9	7
42	Lens-free computational imaging of capillary morphogenesis within three-dimensional substrates. <i>Journal of Biomedical Optics</i> , 2012, 17, 126018.	2.6	17
43	Extending vaterite microviscometry to ex vivo blood vessels by serial calibration. <i>Biomedical Optics Express</i> , 2012, 3, 37.	2.9	6
44	Local small airway epithelial injury induces global smooth muscle contraction and airway constriction. <i>Journal of Applied Physiology</i> , 2012, 112, 627-637.	2.5	16
45	Quantification of local matrix deformations and mechanical properties during capillary morphogenesis in 3D. <i>Integrative Biology (United Kingdom)</i> , 2012, 4, 431.	1.3	41
46	Notch Ligand Endocytosis Generates Mechanical Pulling Force Dependent on Dynamin, Epsins, and Actin. <i>Developmental Cell</i> , 2012, 22, 1299-1312.	7.0	208
47	Optical Tweezers Studies on Notch: Single-Molecule Interaction Strength Is Independent of Ligand Endocytosis. <i>Developmental Cell</i> , 2012, 22, 1313-1320.	7.0	71
48	Concentration Independent Modulation of Local Micromechanics in a Fibrin Gel. <i>PLoS ONE</i> , 2011, 6, e20201.	2.5	76
49	An interdisciplinary systems approach to study sperm physiology and evolution. <i>Wiley Interdisciplinary Reviews: Systems Biology and Medicine</i> , 2011, 3, 36-47.	6.6	2
50	Shrinkable Film Configurable Multiscale Wrinkles for Functional Alignment of Human Embryonic Stem Cells and their Cardiac Derivatives. <i>Advanced Materials</i> , 2011, 23, 5785-5791.	21.0	116
51	An Intact Centrosome Is Required for the Maintenance of Polarization during Directional Cell Migration. <i>PLoS ONE</i> , 2010, 5, e15462.	2.5	30
52	Live Cells Exert 3-Dimensional Traction Forces on Their Substrata. <i>Cellular and Molecular Bioengineering</i> , 2009, 2, 425-436.	2.1	140
53	An automatic system to study sperm motility and energetics. <i>Biomedical Microdevices</i> , 2008, 10, 573-583.	2.8	24
54	Comparison of glycolysis and oxidative phosphorylation as energy sources for mammalian sperm motility, using the combination of fluorescence imaging, laser tweezers, and real-time automated tracking and trapping. <i>Journal of Cellular Physiology</i> , 2008, 217, 745-751.	4.1	112

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55	Independent polarisation control of multiple optical traps. Optics Express, 2008, 16, 15897.	3.4	56
56	The use of optical tweezers to study sperm competition and motility in primates. Journal of the Royal Society Interface, 2008, 5, 297-302.	3.4	63
57	Laser manipulation of cells and tissue. , 2008, , .		1
58	Use of laser tweezers to analyze sperm motility and mitochondrial membrane potential. Journal of Biomedical Optics, 2008, 13, 014002.	2.6	21
59	Laser Tweezers in the Study of Mechanobiology in Live Cells. Methods in Cell Biology, 2007, 82, 497-523.	1.1	8
60	Laser-Based Measurements in Cell Biology. Methods in Cell Biology, 2007, 82, 81-109.	1.1	17
61	Automated Motile Cell Capture and Analysis with Optical Traps. Methods in Cell Biology, 2007, 82, 601-627.	1.1	9
62	High-throughput sorting and analysis of human sperm with a ring-shaped laser trap. Biomedical Microdevices, 2007, 9, 361-369.	2.8	21
63	Size tunable three-dimensional annular laser trap based on axicons. Optics Letters, 2006, 31, 3375.	3.3	19
64	Real-time automated tracking and trapping system for sperm. Microscopy Research and Technique, 2006, 69, 894-902.	2.2	33
65	Visualizing the mechanical activation of Src. Nature, 2005, 434, 1040-1045.	27.8	632
66	Internet-based robotic laser scissors and tweezers microscopy. Microscopy Research and Technique, 2005, 68, 65-74.	2.2	57
67	Cell Cycle Dependence of DNA-dependent Protein Kinase Phosphorylation in Response to DNA Double Strand Breaks. Journal of Biological Chemistry, 2005, 280, 14709-14715.	3.4	291