David J Beebe

List of Publications by Year
in descending order

140 papers	12,073 citations	71102 41 h-index	27406 106 g-index
149 all docs	149 docs citations	149 times ranked	14228 citing authors

#	Article	IF	Citations
1	The present and future role of microfluidics in biomedical research. Nature, 2014, 507, 181-189.	27.8	2,259
2	Physics and Applications of Microfluidics in Biology. Annual Review of Biomedical Engineering, 2002, 4, 261-286.	12.3	1,515
3	Controlled microfluidic interfaces. Nature, 2005, 437, 648-655.	27.8	856
4	Engineers are from PDMS-land, Biologists are from Polystyrenia. Lab on A Chip, 2012, 12, 1224.	6.0	769
5	Surface-Directed Liquid Flow Inside Microchannels. Science, 2001, 291, 1023-1026.	12.6	723
6	Biological implications of polydimethylsiloxane-based microfluidic cell culture. Lab on A Chip, 2009, 9, 2132.	6.0	572
7	Micromilling: a method for ultra-rapid prototyping of plastic microfluidic devices. Lab on A Chip, 2015, 15, 2364-2378.	6.0	394
8	A passive pumping method for microfluidic devices. Lab on A Chip, 2002, 2, 131.	6.0	367
9	Microfabricated elastomeric stencils for micropatterning cell cultures. Journal of Biomedical Materials Research Part B, 2000, 52, 346-353.	3.1	313
10	Tubeless microfluidic angiogenesis assay with three-dimensional endothelial-lined microvessels. Biomaterials, 2013, 34, 1471-1477.	11.4	224
11	Suspended microfluidics. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 10111-10116.	7.1	156
12	Microfluidic 3D models of cancer. Advanced Drug Delivery Reviews, 2014, 79-80, 68-78.	13.7	156
13	Evaluation of a Three-Dimensional Micromixer in a Surface-Based Biosensorâ€. Langmuir, 2003, 19, 1824-1828.	3.5	149
14	One-step purification of nucleic acid for gene expression analysis via Immiscible Filtration Assisted by Surface Tension (IFAST). Lab on A Chip, 2011, 11, 1747.	6.0	140
15	The Extracellular Matrix of Candida albicans Biofilms Impairs Formation of Neutrophil Extracellular Traps. PLoS Pathogens, 2016, 12, e1005884.	4.7	105
16	Chemokine Signaling and the Regulation of Bidirectional Leukocyte Migration in Interstitial Tissues. Cell Reports, 2017, 19, 1572-1585.	6.4	103
17	Evaluating natural killer cell cytotoxicity against solid tumors using a microfluidic model. OncoImmunology, 2019, 8, 1553477.	4.6	103
18	Microfluidic model of ductal carcinoma in situ with 3D, organotypic structure. BMC Cancer, 2015, 15, 12.	2.6	93

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19	LumeNEXT: A Practical Method to Pattern Luminal Structures in ECM Gels. Advanced Healthcare Materials, 2016, 5, 198-204.	7.6	88
20	Microbial metabolomics in open microscale platforms. Nature Communications, 2016, 7, 10610.	12.8	86
21	Stable engineered vascular networks from human induced pluripotent stem cell-derived endothelial cells cultured in synthetic hydrogels. Acta Biomaterialia, 2016, 35, 32-41.	8.3	86
22	Microfluidic tumor-on-a-chip model to evaluate the role of tumor environmental stress on NK cell exhaustion. Science Advances, 2021, 7, .	10.3	82
23	An organic self-regulating microfluidic system. Lab on A Chip, 2001, 1, 96.	6.0	81
24	Microbial volatile communication in human organotypic lung models. Nature Communications, 2017, 8, 1770.	12.8	78
25	Low-Volume Toolbox for the Discovery of Immunosuppressive Fungal Secondary Metabolites. PLoS Pathogens, 2013, 9, e1003289.	4.7	73
26	Cellular observations enabled by microculture: paracrine signaling and population demographics. Integrative Biology (United Kingdom), 2009, 1, 267.	1.3	71
27	Organotypic microfluidic breast cancer model reveals starvation-induced spatial-temporal metabolic adaptations. EBioMedicine, 2018, 37, 144-157.	6.1	68
28	Reconfigurable open microfluidics for studying the spatiotemporal dynamics of paracrine signalling. Nature Biomedical Engineering, 2019, 3, 830-841.	22.5	68
29	Both LRP5 and LRP6 Receptors Are Required to Respond to Physiological Wnt Ligands in Mammary Epithelial Cells and Fibroblasts. Journal of Biological Chemistry, 2012, 287, 16454-16466.	3.4	66
30	Tumor-on-a-chip: a microfluidic model to study cell response to environmental gradients. Lab on A Chip, 2019, 19, 3461-3471.	6.0	65
31	A role for microfluidic systems in precision medicine. Nature Communications, 2022, 13, .	12.8	63
32	Human organotypic lymphatic vessel model elucidates microenvironment-dependent signaling and barrier function. Biomaterials, 2019, 214, 119225.	11.4	61
33	The VerIFAST: an integrated method for cell isolation and extracellular/intracellular staining. Lab on A Chip, 2013, 13, 391-396.	6.0	60
34	Personalized in vitro cancer models to predict therapeutic response: Challenges and a framework for improvement. , 2016, 165, 79-92.		60
35	The importance of being a lumen. FASEB Journal, 2014, 28, 4583-4590.	0.5	59
36	Breast Fibroblasts and ECM Components Modulate Breast Cancer Cell Migration through the Secretion of MMPs in a 3D Microfluidic Co-Culture Model. Cancers, 2020, 12, 1173.	3.7	56

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37	Microfluidic lumen-based systems for advancing tubular organ modeling. Chemical Society Reviews, 2020, 49, 6402-6442.	38.1	54
38	High Specificity in Circulating Tumor Cell Identification Is Required for Accurate Evaluation of Programmed Death-Ligand 1. PLoS ONE, 2016, 11, e0159397.	2.5	54
39	Integrated Analysis of Multiple Biomarkers from Circulating Tumor Cells Enabled by Exclusion-Based Analyte Isolation. Clinical Cancer Research, 2017, 23, 746-756.	7.0	52
40	Microfluidic Multiculture Assay to Analyze Biomolecular Signaling in Angiogenesis. Analytical Chemistry, 2015, 87, 3239-3246.	6.5	50
41	High rates of chromosome missegregation suppress tumor progression but do not inhibit tumor initiation. Molecular Biology of the Cell, 2016, 27, 1981-1989.	2.1	50
42	Human Tumorâ€Lymphatic Microfluidic Model Reveals Differential Conditioning of Lymphatic Vessels by Breast Cancer Cells. Advanced Healthcare Materials, 2020, 9, e1900925.	7.6	45
43	Purification of cell subpopulations via immiscible filtration assisted by surface tension (IFAST). Biomedical Microdevices, 2011, 13, 1033-1042.	2.8	44
44	MicroC³: an ex vivo microfluidic cis-coculture assay to test chemosensitivity and resistance of patient multiple myeloma cells. Integrative Biology (United Kingdom), 2015, 7, 643-654.	1.3	42
45	An Accessible Organotypic Microvessel Model Using iPSCâ€Derived Endothelium. Advanced Healthcare Materials, 2018, 7, 1700497.	7.6	42
46	Matrix density drives 3D organotypic lymphatic vessel activation in a microfluidic model of the breast tumor microenvironment. Lab on A Chip, 2020, 20, 1586-1600.	6.0	40
47	Phosphodiesterase 4D Inhibitors Limit Prostate Cancer Growth Potential. Molecular Cancer Research, 2015, 13, 149-160.	3.4	39
48	Fungal oxylipins direct programmed developmental switches in filamentous fungi. Nature Communications, 2020, 11, 5158.	12.8	37
49	Mammary fibroblasts reduce apoptosis and speed estrogen-induced hyperplasia in an organotypic MCF7-derived duct model. Scientific Reports, 2018, 8, 7139.	3.3	35
50	Automated Operation of Immiscible Filtration Assisted by Surface Tension (IFAST) Arrays for Streamlined Analyte Isolation. Journal of the Association for Laboratory Automation, 2013, 18, 206-211.	2.8	34
51	Under oil open-channel microfluidics empowered by exclusive liquid repellency. Science Advances, 2020, 6, eaay9919.	10.3	34
52	Enabling cell recovery from 3D cell culture microfluidic devices for tumour microenvironment biomarker profiling. Scientific Reports, 2019, 9, 6199.	3.3	33
53	Patient-specific organotypic blood vessels as an in vitro model for anti-angiogenic drug response testing in renal cell carcinoma. EBioMedicine, 2019, 42, 408-419.	6.1	33
54	A Quantitative Comparison of Human HT-1080 Fibrosarcoma Cells and Primary Human Dermal Fibroblasts Identifies a 3D Migration Mechanism with Properties Unique to the Transformed Phenotype. PLoS ONE, 2013, 8, e81689.	2.5	32

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55	A microfluidic coculture and multiphoton FAD analysis assay provides insight into the influence of the bone microenvironment on prostate cancer cells. Integrative Biology (United Kingdom), 2014, 6, 627-635.	1.3	31
56	Effects of culture method on response to EGFR therapy in head and neck squamous cell carcinoma cells. Scientific Reports, 2019, 9, 12480.	3.3	30
57	Toward improved <i>in vitro</i> models of human cancer. APL Bioengineering, 2021, 5, 010902.	6.2	30
58	Deconstructing tumor heterogeneity: the stromal perspective. Oncotarget, 2020, 11, 3621-3632.	1.8	29
59	Tunable Microfabricated Hydrogelsâ€"A Study in Protein Interaction and Diffusion. Biomedical Microdevices, 2003, 5, 35-45.	2.8	28
60	Exclusive Liquid Repellency: An Open Multi-Liquid-Phase Technology for Rare Cell Culture and Single-Cell Processing. ACS Applied Materials & Interfaces, 2018, 10, 17065-17070.	8.0	28
61	Oil immersed lossless total analysis system for integrated RNA extraction and detection of SARS-CoV-2. Nature Communications, 2021, 12, 4317.	12.8	28
62	Neutrophil trafficking on-a-chip: an <i>in vitro</i>, organotypic model for investigating neutrophil priming, extravasation, and migration with spatiotemporal control. Lab on A Chip, 2019, 19, 3697-3705.	6.0	27
63	Particle imaging technique for measuring the deformation rate of hydrogel microstructures. Applied Physics Letters, 2000, 76, 3310-3312.	3.3	26
64	Autofluorescence Imaging of 3D Tumorâ€"Macrophage Microscale Cultures Resolves Spatial and Temporal Dynamics of Macrophage Metabolism. Cancer Research, 2020, 80, 5408-5423.	0.9	26
65	Substrate-Modified Hydrogels for Autonomous Sensing of Botulinum Neurotoxin Type A. Chemistry of Materials, 2007, 19, 5842-5844.	6.7	25
66	Surface topography and hydrophilicity regulate macrophage phenotype in milled microfluidic systems. Lab on A Chip, 2018, 18, 3011-3017.	6.0	25
67	Elucidating cancer-vascular paracrine signaling using a human organotypic breast cancer cell extravasation model. Biomaterials, 2021, 270, 120640.	11.4	25
68	HIV Viral RNA Extraction in Wax Immiscible Filtration Assisted by Surface Tension (IFAST) Devices. Journal of Molecular Diagnostics, 2014, 16, 297-304.	2.8	24
69	Efficient Sample Preparation from Complex Biological Samples Using a Sliding Lid for Immobilized Droplet Extractions. Analytical Chemistry, 2014, 86, 6355-6362.	6.5	23
70	Mammary adipose stromal cells derived from obese women reduce sensitivity to the aromatase inhibitor anastrazole in an organotypic breast model. FASEB Journal, 2019, 33, 8623-8633.	0.5	23
71	Organotypic primary blood vessel models of clear cell renal cell carcinoma for single-patient clinical trials. Lab on A Chip, 2020, 20, 4420-4432.	6.0	21
72	A Golgi-Localized Pool of the Mitotic Checkpoint Component Mad1 Controls Integrin Secretion and Cell Migration. Current Biology, 2014, 24, 2687-2692.	3.9	20

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73	Double-exclusive liquid repellency (double-ELR): an enabling technology for rare phenotype analysis. Lab on A Chip, 2018, 18, 2710-2719.	6.0	20
74	Transitions from mono- to co- to tri-culture uniquely affect gene expression in breast cancer, stromal, and immune compartments. Biomedical Microdevices, 2016, 18, 70.	2.8	19
75	Integration of Magnetic Bead-Based Cell Selection into Complex Isolations. ACS Omega, 2018, 3, 3908-3917.	3.5	19
76	Primary head and neck tumour-derived fibroblasts promote lymphangiogenesis in a lymphatic organotypic co-culture model. EBioMedicine, 2021, 73, 103634.	6.1	19
77	Characterization of Molecules Binding to the 70K N-Terminal Region of Fibronectin by IFAST Purification Coupled with Mass Spectrometry. Journal of Proteome Research, 2013, 12, 3393-3404.	3.7	18
78	Weak proteinâ€“protein interactions revealed by immiscible filtration assisted by surface tension. Analytical Biochemistry, 2014, 447, 133-140.	2.4	18
79	Cellular Microenvironment Dictates Androgen Production by Murine Fetal Leydig Cells in Primary Culture1. Biology of Reproduction, 2014, 91, 85.	2.7	18
80	Circulating Tumor Cells in Metastatic Breast Cancer: A Prognostic and Predictive Marker. Journal of Patient-centered Research and Reviews, 2014, 1, 85-92.	0.9	18
81	AirJump: Using Interfaces to Instantly Perform Simultaneous Extractions. ACS Applied Materials & Interfaces, 2016, 8, 15040-15045.	8.0	16
82	Automated System for Small-Population Single-Particle Processing Enabled by Exclusive Liquid Repellency. SLAS Technology, 2019, 24, 535-542.	1.9	16
83	Microfluidic Tumor-on-a-Chip Model to Study Tumor Metabolic Vulnerability. International Journal of Molecular Sciences, 2020, 21, 9075.	4.1	16
84	Social motility of biofilm-like microcolonies in a gliding bacterium. Nature Communications, 2021, 12, 5700.	12.8	16
85	Immune Cell Paracrine Signaling Drives the Neutrophil Response to A. fumigatus in an Infection-on-a-Chip Model. Cellular and Molecular Bioengineering, 2021, 14, 133-145.	2.1	15
86	Streamlining gene expression analysis: integration of co-culture and mRNA purification. Integrative Biology (United Kingdom), 2014, 6, 224.	1.3	14
87	Magnetic System for Automated Manipulation of Paramagnetic Particles. Analytical Chemistry, 2016, 88, 9902-9907.	6.5	14
88	Engineered Perineural Vascular Plexus for Modeling Developmental Toxicity. Advanced Healthcare Materials, 2020, 9, e2000825.	7.6	14
89	Development and initial clinical testing of a multiplexed circulating tumor cell assay in patients with clear cell renal cell carcinoma. Molecular Oncology, 2021, 15, 2330-2344.	4.6	14
90	High-content adhesion assay to address limited cell samples. Integrative Biology (United Kingdom), 2013, 5, 720.	1.3	13

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91	Evaluation of PEG-Based Hydrogel Influence on Estrogen-Receptor-Driven Responses in MCF7 Breast Cancer Cells. ACS Biomaterials Science and Engineering, 2019, 5, 6089-6098.	5.2	13
92	High-Density Self-Contained Microfluidic KOALA Kits for Use by Everyone. Journal of the Association for Laboratory Automation, 2015, 20, 146-153.	2.8	11
93	Live cell molecular analysis of primary prostate cancer organoids identifies persistent androgen receptor signaling. Medical Oncology, 2021, 38, 135.	2.5	11
94	Adaptation of a Simple Microfluidic Platform for High-Dimensional Quantitative Morphological Analysis of Human Mesenchymal Stromal Cells on Polystyrene-Based Substrates. SLAS Technology, 2017, 22, 646-661.	1.9	10
95	Centrifugation-Assisted Immiscible Fluid Filtration for Dual-Bioanalyte Extraction. Analytical Chemistry, 2019, 91, 11848-11855.	6.5	10
96	User-defined morphogen patterning for directing human cell fate stratification. Scientific Reports, 2019, 9, 6433.	3.3	10
97	A bioengineered organotypic prostate model for the study of tumor microenvironment-induced immune cell activation. Integrative Biology (United Kingdom), 2020, 12, 250-262.	1.3	10
98	Pairing Microwell Arrays with an Affordable, Semiautomated Single-Cell Aspirator for the Interrogation of Circulating Tumor Cell Heterogeneity. SLAS Technology, 2020, 25, 162-176.	1.9	10
99	Transendothelial migration induces differential migration dynamics of leukocytes in tissue matrix. Journal of Cell Science, 2021, 134, .	2.0	10
100	Innate immune cell response to host-parasite interaction in a human intestinal tissue microphysiological system. Science Advances, 2022, 8, eabm8012.	10.3	10
101	Interfacial formation of porous membranes with poly(ethylene glycol) in a microfluidic environment. Journal of Applied Polymer Science, 2008, 110, 1581-1589.	2.6	9
102	Integrating electrochemical immunosensing and cell adhesion technologies for cancer cell detection and enumeration. Electrochimica Acta, 2018, 286, 205-211.	5.2	9
103	Development of a Microfluidic Array to Study Drug Response in Breast Cancer. Molecules, 2019, 24, 4385.	3.8	9
104	Modeling chemical effects on breast cancer: the importance of the microenvironment in vitro. Integrative Biology (United Kingdom), 2020, 12, 21-33.	1.3	9
105	Microphysiological model of renal cell carcinoma to inform anti-angiogenic therapy. Biomaterials, 2022, 283, 121454.	11.4	9
106	A Cell Programmable Assay (CPA) chip. Lab on A Chip, 2010, 10, 2071.	6.0	8
107	Using Exclusion-Based Sample Preparation (ESP) to Reduce Viral Load Assay Cost. PLoS ONE, 2015, 10, e0143631.	2.5	8
108	Volumeless reagent delivery: a liquid handling method for adding reagents to microscale droplets without increasing volume. Lab on A Chip, 2022, 22, 286-295.	6.0	8

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109	Underâ€Oil Autonomously Regulated Oxygen Microenvironments: A Goldilocks Principleâ€Based Approach for Microscale Cell Culture. Advanced Science, 2022, 9, e2104510.	11.2	8
110	Models of Renal Cell Carcinoma Used to Investigate Molecular Mechanisms and Develop New Therapeutics. Frontiers in Oncology, 2022, 12, 871252.	2.8	8
111	A Combined Fabrication and Instrumentation Platform for Sample Preparation. Journal of the Association for Laboratory Automation, 2014, 19, 267-274.	2.8	7
112	Quantification of small cell numbers with a microchannel device. BioTechniques, 2008, 45, 321-325.	1.8	6
113	Fluorescence-Based Assessment of Plasma-Induced Hydrophilicity in Microfluidic Devices via Nile Red Adsorption and Depletion. Analytical Chemistry, 2014, 86, 7258-7263.	6.5	6
114	Multikingdom microscale models. PLoS Pathogens, 2017, 13, e1006424.	4.7	6
115	miFAST: A novel and rapid microRNA target capture method. Molecular Carcinogenesis, 2018, 57, 559-566.	2.7	6
116	A reconfigurable microscale assay enables insights into cancer-associated fibroblast modulation of immune cell recruitment. Integrative Biology (United Kingdom), 2021, 13, 87-97.	1.3	6
117	Role of the Skin Microenvironment in Melanomagenesis: Epidermal Keratinocytes and Dermal Fibroblasts Promote BRAF Oncogene-Induced Senescence Escape in Melanocytes. Cancers, 2022, 14, 1233.	3.7	6
118	Development of a Highly Sensitive Cell-Based Assay for Detecting Botulinum Neurotoxin Type A through Neural Culture Media Optimization. Journal of Biomolecular Screening, 2016, 21, 65-73.	2.6	5
119	Vital ex vivo tissue labeling and pathology-guided micropunching to characterize cellular heterogeneity in the tissue microenvironment. BioTechniques, 2018, 64, 13-19.	1.8	5
120	A Microphysiological Approach to Evaluate Effectors of Intercellular Hedgehog Signaling in Development. Frontiers in Cell and Developmental Biology, 2021, 9, 621442.	3.7	5
121	Microfluidic Systems to Study Neutrophil Forward and Reverse Migration. Frontiers in Immunology, 2021, 12, 781535.	4.8	5
122	Harnessing gravitational, hydrodynamic and negative dielectrophoretic forces for higher throughput cell sorting. Biochip Journal, 2012, 6, 229-239.	4.9	4
123	Immune cell mediated cabozantinib resistance for patients with renal cell carcinoma. Integrative Biology (United Kingdom), 2021, 13, 259-268.	1.3	4
124	Non-toxic fragment of botulinum neurotoxin type A and monomethyl auristatin E conjugate for targeted therapy for neuroendocrine tumors. Cancer Gene Therapy, 2020, 27, 898-909.	4.6	2
125	Fresh tissue procurement and preparation for multicompartment and multimodal analysis of the prostate tumor microenvironment. Prostate, 2022, 82, 836-849.	2.3	2
126	Microscale bioengineering inspired by nature: from widgets to cell biology. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 1.	0.5	1

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127	Lab on a Chip launches a new Methods section. Lab on A Chip, 2009, 9, 3035.	6.0	1
128	Future of lab on a chip. Biomedical Engineering Letters, 2012, 2, 71-71.	4.1	1
129	Induced Pluripotent Stem Cells on a Chip: A Self-Contained, Accessible, Pipette-less iPSC Culturing and Differentiation Kit. SLAS Technology, 2021, 26, 80-91.	1.9	1
130	Therapeutic targeting of tumor-associated macrophages through microscale engineering of the prostate cancer microenvironment.. Journal of Clinical Oncology, 2017, 35, 184-184.	1.6	1
131	Analytical validation and initial clinical testing of quantitative microscopic evaluation for PD-L1 and HLA I expression on circulating tumor cells from patients with non-small cell lung cancer. Biomarker Research, 2022, 10, 26.	6.8	1
132	Design of microfluidic impellers capable of bi-directional pumping under a single rotating magnetic actuation. , 2007, , .		0
133	Microscale Bioengineering Inspired by Nature: From Widgets to Cell Biology. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, , .	0.5	0
134	18F-DCFPyL PSMA PET imaging compared to conventional imaging in the detection of pelvic nodal metastases in patients with locally advanced or oligometastatic prostate cancer.. Journal of Clinical Oncology, 2021, 39, 36-36.	1.6	0
135	Preoperative predictors of biochemical recurrence in a phase II trial of neoadjuvant therapy in very high-risk prostate cancer.. Journal of Clinical Oncology, 2021, 39, 74-74.	1.6	0
136	Microfluidic Platform Enabling Primary Multiple Myeloma Mono- and Cis-Co-Culture Analysis. Blood, 2012, 120, 1830-1830.	1.4	0
137	Nuclear localization of the androgen receptor in prostate cancer circulating tumor cells from men who have failed androgen deprivation therapy.. Journal of Clinical Oncology, 2013, 31, e22141-e22141.	1.6	0
138	Predictive and pharmacodynamic biomarkers of kinase inhibitors in renal cell carcinoma circulating tumor cells using the versa platform.. Journal of Clinical Oncology, 2014, 32, e15600-e15600.	1.6	0
139	Targeting tumor-associated macrophage (TAM) mediated inhibition of T-cell migration in prostate cancer using epigenetic modifying agents.. Journal of Clinical Oncology, 2020, 38, 166-166.	1.6	0
140	Phase II trial of neoadjuvant chemohormonal therapy (NAC) in prostate cancer (PC) with response assessment using PSMA PET/MRI.. Journal of Clinical Oncology, 2020, 38, 334-334.	1.6	0