Todd A Sulchek

List of Publications by Year
in descending order

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91	4,270	136950 32	118850 62
papers	citations	h-index	g-index

93	93	93	7137
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Cell Stiffness Is a Biomarker of the Metastatic Potential of Ovarian Cancer Cells. PLoS ONE, 2012, 7, e46609.	2.5	596
2	Maleimide Crossâ€Linked Bioactive PEG Hydrogel Exhibits Improved Reaction Kinetics and Crossâ€Linking for Cell Encapsulation and In Situ Delivery. Advanced Materials, 2012, 24, 64-70.	21.0	458
3	Dynamic force spectroscopy of parallel individual Mucin1-antibody bonds. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 16638-16643.	7.1	163
4	Effects of Microparticle Size and Fc Density on Macrophage Phagocytosis. PLoS ONE, 2013, 8, e60989.	2.5	161
5	Porous PEEK improves the bone-implant interface compared to plasma-sprayed titanium coating on PEEK. Biomaterials, 2018, 185, 106-116.	11.4	155
6	Nuclear Membrane-Targeted Gold Nanoparticles Inhibit Cancer Cell Migration and Invasion. ACS Nano, 2017, 11, 3716-3726.	14.6	135
7	Insertion of Membrane Proteins into Discoidal Membranes Using a Cell-Free Protein Expression Approach. Journal of Proteome Research, 2008, 7, 3535-3542.	3.7	127
8	Curcumin nanodisks: formulation and characterization. Nanomedicine: Nanotechnology, Biology, and Medicine, 2011, 7, 162-167.	3.3	127
9	Physical and chemical microenvironmental cues orthogonally control the degree and duration of fibrosisâ€associated epithelialâ€toâ€mesenchymal transitions. Journal of Pathology, 2013, 229, 25-35.	4.5	125
10	Trabecular meshwork stiffness in glaucoma. Experimental Eye Research, 2017, 158, 3-12.	2.6	120
11	Cell-free Co-expression of Functional Membrane Proteins and Apolipoprotein, Forming Soluble Nanolipoprotein Particles. Molecular and Cellular Proteomics, 2008, 7, 2246-2253.	3.8	109
12	Synthetic matrices reveal contributions of ECM biophysical and biochemical properties to epithelial morphogenesis. Journal of Cell Biology, 2016, 212, 113-124.	5.2	100
13	Single-platelet nanomechanics measured by high-throughput cytometry. Nature Materials, 2017, 16, 230-235.	27.5	88
14	Strength of Multiple Parallel Biological Bonds. Biophysical Journal, 2006, 90, 4686-4691.	0.5	87
15	Improving T-cell expansion and function for adoptive T-cell therapy using ex vivo treatment with PI3KÎ´ inhibitors and VIP antagonists. Blood Advances, 2018, 2, 210-223.	5.2	87
16	Stiffness Dependent Separation of Cells in a Microfluidic Device. PLoS ONE, 2013, 8, e75901.	2.5	86
17	Cellular softening mediates leukocyte demargination and trafficking, thereby increasing clinical blood counts. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1987-1992.	7.1	82
18	Different Apolipoproteins Impact Nanolipoprotein Particle Formation. Journal of the American Chemical Society, 2007, 129, 14348-14354.	13.7	80

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19	Î±vÎ²3 Integrin drives fibroblast contraction and strain stiffening of soft provisional matrix during progressive fibrosis. JCI Insight, 2018, 3, .	5.0	78
20	Estimating Human Trabecular Meshwork Stiffness by Numerical Modeling and Advanced OCT Imaging. , 2017, 58, 4809.		66
21	Mechanical stiffness as an improved single-cell indicator of osteoblastic human mesenchymal stem cell differentiation. Journal of Biomechanics, 2014, 47, 2197-2204.	2.1	61
22	Microfluidic Sorting of Cells by Viability Based on Differences in Cell Stiffness. Scientific Reports, 2017, 7, 1997.	3.3	59
23	The relationship between outflow resistance and trabecular meshwork stiffness in mice. Scientific Reports, 2018, 8, 5848.	3.3	57
24	Microfluidic cellular enrichment and separation through differences in viscoelastic deformation. Lab on A Chip, 2015, 15, 532-540.	6.0	53
25	Microfluidic cell sorting by stiffness to examine heterogenic responses of cancer cells to chemotherapy. Cell Death and Disease, 2018, 9, 239.	6.3	52
26	Extreme Hardening of PDMS Thin Films Due to High Compressive Strain and Confined Thickness. Langmuir, 2011, 27, 8470-8477.	3.5	51
27	Microfluidic generation of transient cell volume exchange for convectively driven intracellular delivery of large macromolecules. Materials Today, 2018, 21, 703-712.	14.2	51
28	Periostin promotes liver fibrogenesis by activating lysyl oxidase in hepatic stellate cells. Journal of Biological Chemistry, 2018, 293, 12781-12792.	3.4	51
29	Quantifying size distributions of nanolipoprotein particles with single-particle analysis and molecular dynamic simulations. Journal of Lipid Research, 2008, 49, 1420-1430.	4.2	49
30	In vivo imaging of nanoparticle-labeled CAR T cells. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	40
31	Decoupling Internalization, Acidification and Phagosomal-Endosomal/lysosomal Fusion during Phagocytosis of InlA Coated Beads in Epithelial Cells. PLoS ONE, 2009, 4, e6056.	2.5	38
32	Ptpn21 Controls Hematopoietic Stem Cell Homeostasis and Biomechanics. Cell Stem Cell, 2019, 24, 608-620.e6.	11.1	35
33	Atomic force microscopy differentiates discrete size distributions between membrane protein containing and empty nanolipoprotein particles. Biochimica Et Biophysica Acta - Biomembranes, 2009, 1788, 724-731.	2.6	34
34	Electrosynthesis of Ammonia Using Porous Bimetallic Pdâ€“Ag Nanocatalysts in Liquid- and Gas-Phase Systems. ACS Catalysis, 2020, 10, 10197-10206.	11.2	33
35	Bifunctional Janus Microparticles with Spatially Segregated Proteins. Langmuir, 2012, 28, 10033-10039.	3.5	32
36	Anti-fibrotic activity of a rho-kinase inhibitor restores outflow function and intraocular pressure homeostasis. ELife, 2021, 10, .	6.0	32

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37	Aqueous Zinc Compounds as Residual Antimicrobial Agents for Textiles. ACS Applied Materials & Interfaces, 2018, 10, 7709-7716.	8.0	31
38	Cellular Stiffness as a Novel Stemness Marker in the Corneal Limbus. Biophysical Journal, 2016, 111, 1761-1772.	0.5	29
39	Cell Mechanical and Physiological Behavior in the Regime of Rapid Mechanical Compressions that Lead to Cell Volume Change. Small, 2020, 16, e1903857.	10.0	28
40	Effects of Surface Topography and Chemistry on Polyether-Ether-Ketone (PEEK) and Titanium Osseointegration. Spine, 2020, 45, E417-E424.	2.0	26
41	Normal saline is associated with increased sickle red cell stiffness and prolonged transit times in a microfluidic model of the capillary system. Microcirculation, 2017, 24, e12353.	1.8	23
42	Biophysical subsets of embryonic stem cells display distinct phenotypic and morphological signatures. PLoS ONE, 2018, 13, e0192631.	2.5	20
43	Characterization and Purification of Polydisperse Reconstituted Lipoproteins and Nanolipoprotein Particles. International Journal of Molecular Sciences, 2009, 10, 2958-2971.	4.1	19
44	Bacterial Growth and Death on Cotton Fabrics Conformally Coated with ZnO Thin Films of Varying Thicknesses via Atomic Layer Deposition (ALD). Jom, 2019, 71, 178-184.	1.9	19
45	Instant labeling of therapeutic cells for multimodality imaging. Theranostics, 2020, 10, 6024-6034.	10.0	17
46	Microfluidic transfection of mRNA into human primary lymphocytes and hematopoietic stem and progenitor cells using ultra-fast physical deformations. Scientific Reports, 2021, 11, 21407.	3.3	17
47	TUNABLE COMPLEMENT ACTIVATION BY PARTICLES WITH VARIABLE SIZE AND Fc DENSITY. Nano LIFE, 2013, 03, 1341001.	0.9	16
48	Cellular enrichment through microfluidic fractionation based on cell biomechanical properties. Microfluidics and Nanofluidics, 2015, 19, 987-993.	2.2	15
49	Fc microparticles can modulate the physical extent and magnitude of complement activity. Biomaterials Science, 2017, 5, 463-474.	5.4	15
50	Enhancing size based size separation through vertical focus microfluidics using secondary flow in a ridged microchannel. Scientific Reports, 2017, 7, 17375.	3.3	15
51	Accurately tracking single-cell movement trajectories in microfluidic cell sorting devices. PLoS ONE, 2018, 13, e0192463.	2.5	13
52	Modulating local S1P receptor signaling as a regenerative immunotherapy after volumetric muscle loss injury. Journal of Biomedical Materials Research - Part A, 2021, 109, 695-712.	4.0	12
53	Continuous Sorting of Cells Based on Differential P Selectin Glycoprotein Ligand Expression Using Molecular Adhesion. Analytical Chemistry, 2017, 89, 11545-11551.	6.5	11
54	Molecular analysis of the inhibitory effect of N-acetyl-L-cysteine on the proliferation and invasiveness of pancreatic cancer cells. Anti-Cancer Drugs, 2013, 24, 504-518.	1.4	10

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55	Domain-specific mechanical modulation of VWFâ€“ADAMTS13 interaction. Molecular Biology of the Cell, 2019, 30, 1920-1929.	2.1	10
56	Optimizing Flux Capacity of Dead-end Filtration Membranes by Controlling Flow with Pulse Width Modulated Periodic Backflush. Scientific Reports, 2020, 10, 896.	3.3	10
57	Counting and Breaking Individual Biological Bonds: Force Spectroscopy of Tethered Ligand-Receptor Pairs. Current Nanoscience, 2007, 3, 41-48.	1.2	10
58	Integrated two-cylinder liquid piston Stirling engine. Applied Physics Letters, 2014, 105, .	3.3	9
59	Three-dimensional particle tracking in microfluidic channel flow using in and out of focus diffraction. Flow Measurement and Instrumentation, 2015, 45, 218-224.	2.0	9
60	Spatiotemporal Mechanical Variation Reveals Critical Role for Rho Kinase During Primitive Streak Morphogenesis. Annals of Biomedical Engineering, 2013, 41, 421-432.	2.5	8
61	Biomechanics of Endothelial Tubule Formation Differentially Modulated by Cerebral Cavernous Malformation Proteins. IScience, 2018, 9, 347-358.	4.1	8
62	Decreased cell stiffness enhances leukemia development and progression. Leukemia, 2020, 34, 2493-2497.	7.2	8
63	Microfluidic Platform to Transduce Cell Viability to Distinct Flow Pathways for High-Accuracy Sensing. ACS Sensors, 2021, 6, 3789-3799.	7.8	8
64	Force and torque on spherical particles in micro-channel flows using computational fluid dynamics. Royal Society Open Science, 2016, 3, 160298.	2.4	7
65	Stiffness based enrichment of leukemia cells using microfluidics. APL Bioengineering, 2020, 4, 036101.	6.2	7
66	Label-free microfluidic enrichment of cancer cells from non-cancer cells in ascites. Scientific Reports, 2021, 11, 18032.	3.3	7
67	Singleâ€Molecule Approach to Understanding Multivalent Binding Kinetics. Annals of the New York Academy of Sciences, 2009, 1161, 74-82.	3.8	6
68	Bioactive Hydrogels: Maleimide Crossâ€Linked Bioactive PEG Hydrogel Exhibits Improved Reaction Kinetics and Crossâ€Linking for Cell Encapsulation and In Situ Delivery (Adv. Mater. 1/2012). Advanced Materials, 2012, 24, 2-2.	21.0	6
69	Optical method for automated measurement of glass micropipette tip geometry. Precision Engineering, 2016, 46, 88-95.	3.4	6
70	Label-free microfluidic enrichment of photoreceptor cells. Experimental Eye Research, 2020, 199, 108166.	2.6	6
71	Nanofiber-Based Delivery of Bioactive Lipids Promotes Pro-regenerative Inflammation and Enhances Muscle Fiber Growth After Volumetric Muscle Loss. Frontiers in Bioengineering and Biotechnology, 2021, 9, 650289.	4.1	6
72	Microfluidic processing of stem cells for autologous cell replacement. Stem Cells Translational Medicine, 2021, 10, 1384-1393.	3.3	6

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73	Heterofunctional Particles as Single Cell Sensors to Capture Secreted Immunoglobulins and Isolate Antigenâ€Specific Antibody Secreting Cells. Advanced Healthcare Materials, 2021, 10, 2001947.	7.6	5
74	Microfluidics delivery of DARPP-32 into HeLa cells maintains viability for in-cell NMR spectroscopy. Communications Biology, 2022, 5, 451.	4.4	5
75	Constant tip-surface distance with atomic force microscopy via quality factor feedback. Review of Scientific Instruments, 2012, 83, 023706.	1.3	4
76	Enhanced stochastic fluctuations to measure steep adhesive energy landscapes. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14213-14218.	7.1	4
77	A Liquid-Handling Robot for Automated Attachment of Biomolecules to Microbeads. Journal of the Association for Laboratory Automation, 2016, 21, 526-532.	2.8	4
78	Optimization of Microparticle Reagents to Collect and Detect Antibody. Langmuir, 2019, 35, 11717-11724.	3.5	3
79	Scaling microfluidic throughput with flow-balanced manifolds to simply control devices with multiple inlets and outlets. Biomicrofluidics, 2022, 16, 034104.	2.4	3
80	Microfluidic to Nanofluidic Interface via a Thermally Decomposable Sacrificial Polymer. Journal of Microelectromechanical Systems, 2015, 24, 1741-1746.	2.5	2
81	Mechanoporation enables rapid and efficient radiolabeling of stem cells for PET imaging. Scientific Reports, 2022, 12, 2955.	3.3	2
82	Reconstructing Multiwell Potentials with Steep Gradients Using Stochastically Excited Spring Probes. Journal of Physical Chemistry C, 2017, 121, 7248-7258.	3.1	1
83	Assessing the Physiologic Relevance of Red Blood Cell Deformability in Iron Deficiency Anemia. Blood, 2021, 138, 4153-4153.	1.4	1
84	In-cell NMR based technology to study protein interactions. Biophysical Journal, 2022, 121, 317a.	0.5	1
85	High Force Sensitivity Composite Nanofluidic AFM Cantilever. Journal of Microelectromechanical Systems, 2018, 27, 613-624.	2.5	0
86	Tuning Antibody Presentation to Enhance T-Cell Activation for Downstream Cytotoxicity. Langmuir, 2021, 37, 4783-4792.	3.5	0
87	Reconstructing the intrinsic potential energy landscape of interfacial interactions with thermally modulated force spectroscopy. Physical Review Research, 2021, 3, .	3.6	0
88	Nanomechanics of Platelet Contractility. Blood, 2011, 118, 2202-2202.	1.4	0
89	High-Throughput Nanomechanical Platelet Contraction Measurements Using Patterned Hydrogels.. Blood, 2012, 120, 2172-2172.	1.4	0
90	White Blood Cell Mechanics Mediate Glucocorticoid- and Catecholamine-Induced Demargination. Blood, 2013, 122, 3459-3459.	1.4	0

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91	Fabrication and Characterization of A Rigid Microfluidic Mechanoporation Device with High Pressure Tolerance and High Cell Transfection. , 2022, , .		0