John M Tarbell

List of Publications by Year
in descending order

92 papers	7,215 citations	53660 45 h-index	60497 81 g-index
94 all docs	94 docs citations	94 times ranked	6246 citing authors

#	Article	IF	Citations
1	Glycocalyx mechanotransduction mechanisms are involved in renal cancer metastasis. Matrix Biology Plus, 2022, 13, 100100.	1.9	5
2	The glycocalyx core protein Glypican 1 protects vessel wall endothelial cells from stiffness-mediated dysfunction and disease. Cardiovascular Research, 2021, 117, 1592-1605.	1.8	36
3	Stenting-induced Vasa Vasorum compression and subsequent flow resistance: a finite element study. Biomechanics and Modeling in Mechanobiology, 2021, 20, 121-133.	1.4	3
4	The Glycocalyx and Its Role in Vascular Physiology and Vascular Related Diseases. Cardiovascular Engineering and Technology, 2021, 12, 37-71.	0.7	67
5	Special Issue on Professor John M. Tarbellâ€™s Contribution to Cardiovascular Engineering. Cardiovascular Engineering and Technology, 2021, 12, 1-8.	0.7	1
6	Heparan sulfate proteoglycan glypican-1 and PECAM-1 cooperate in shear-induced endothelial nitric oxide production. Scientific Reports, 2021, 11, 11386.	1.6	25
7	Matrix Stiffness Affects Glycocalyx Expression in Cultured Endothelial Cells. Frontiers in Cell and Developmental Biology, 2021, 9, 731666.	1.8	12
8	The role of oxygen transport in atherosclerosis and vascular disease. Journal of the Royal Society Interface, 2020, 17, 20190732.	1.5	29
9	The cancer cell glycocalyx proteoglycan Glypican-1 mediates interstitial flow mechanotransduction to enhance cell migration and metastasis. Biorheology, 2019, 56, 151-161.	1.2	15
10	Heparan sulfate proteoglycan, integrin, and syndecanâ€4 are mechanosensors mediating cyclic strainâ€modulated endothelial gene expression in mouse embryonic stem cellâ€derived endothelial cells. Biotechnology and Bioengineering, 2019, 116, 2730-2741.	1.7	13
11	Endothelial surface glycocalyx (ESG) components and ultra-structure revealed by stochastic optical reconstruction microscopy (STORM). Biorheology, 2019, 56, 77-88.	1.2	23
12	The Role of Endothelial Surface Glycocalyx in Mechanosensing and Transduction. Advances in Experimental Medicine and Biology, 2018, 1097, 1-27.	0.8	66
13	Direct current stimulation of endothelial monolayers induces a transient and reversible increase in transport due to the electroosmotic effect. Scientific Reports, 2018, 8, 9265.	1.6	47
14	Surface glycocalyx and glypicanâ€1 mediate tumor cell metastasis. FASEB Journal, 2018, 32, 281.5.	0.2	0
15	Fluid shear stress induces upregulation of COX-2 and PGI₂release in endothelial cells via a pathway involving PECAM-1, PI3K, FAK, and p38. American Journal of Physiology - Heart and Circulatory Physiology, 2017, 312, H485-H500.	1.5	76
16	Mechanotransmission in endothelial cells subjected to oscillatory and multi-directional shear flow. Journal of the Royal Society Interface, 2017, 14, 20170185.	1.5	37
17	Endothelial Glycocalyx-Mediated Nitric Oxide Production in Response to Selective AFM Pulling. Biophysical Journal, 2017, 113, 101-108.	0.2	77
18	Endothelial glycocalyx, apoptosis and inflammation in an atherosclerotic mouse model. Atherosclerosis, 2016, 252, 136-146.	0.4	99

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19	Heparan sulfate proteoglycans mediate renal carcinoma metastasis. International Journal of Cancer, 2016, 139, 2791-2801.	2.3	28
20	Sphingosineâ€1â€phosphate Maintains Normal Vascular Permeability by Preserving Endothelial Surface Glycocalyx in Intact Microvessels. Microcirculation, 2016, 23, 301-310.	1.0	52
21	Exocytosis of Endothelial Lysosome-Related Organelles Hair-Triggers a Patchy Loss of Glycocalyx at the Onset of Sepsis. American Journal of Pathology, 2016, 186, 248-258.	1.9	31
22	Hydraulic Conductivity of Smooth Muscle Cell-Initiated Arterial Cocultures. Annals of Biomedical Engineering, 2016, 44, 1721-1733.	1.3	2
23	Interaction between the Stress Phase Angle (SPA) and the Oscillatory Shear Index (OSI) Affects Endothelial Cell Gene Expression. PLoS ONE, 2016, 11, e0166569.	1.1	17
24	Endothelial Surface Glycocalyx Can Regulate Flow-Induced Nitric Oxide Production in Microvessels In Vivo. PLoS ONE, 2015, 10, e0117133.	1.1	100
25	The Interaction between Fluid Wall Shear Stress and Solid Circumferential Strain Affects Endothelial Gene Expression. PLoS ONE, 2015, 10, e0129952.	1.1	38
26	Aquaporin-1 facilitates pressure-driven water flow across the aortic endothelium. American Journal of Physiology - Heart and Circulatory Physiology, 2015, 308, H1051-H1064.	1.5	17
27	Sphingosine 1-phosphate induced synthesis of glycocalyx on endothelial cells. Experimental Cell Research, 2015, 339, 90-95.	1.2	67
28	Endothelial Glycocalyx and Apoptosis in Atherosclerosis. FASEB Journal, 2015, 29, 631.3.	0.2	1
29	The Adaptive Remodeling of Endothelial Glycocalyx in Response to Fluid Shear Stress. PLoS ONE, 2014, 9, e86249.	1.1	118
30	Shear-induced force transmission in a multicomponent, multicell model of the endothelium. Journal of the Royal Society Interface, 2014, 11, 20140431.	1.5	24
31	Mechanisms of flow-dependent endothelial COX-2 and PGI<inf>2</inf> expression. , 2014, , .		1
32	Effect of shear stress on water and LDL transport through cultured endothelial cell monolayers. Atherosclerosis, 2014, 233, 682-690.	0.4	30
33	Fluid Mechanics, Arterial Disease, and Gene Expression. Annual Review of Fluid Mechanics, 2014, 46, 591-614.	10.8	134
34	Mechanosensing at the Vascular Interface. Annual Review of Biomedical Engineering, 2014, 16, 505-532.	5.7	146
35	Shear-induced endothelial NOS activation and remodeling via heparan sulfate, glypican-1, and syndecan-1. Integrative Biology (United Kingdom), 2014, 6, 338-347.	0.6	160
36	Sphingosine-1-phosphate protects endothelial glycocalyx by inhibiting syndecan-1 shedding. American Journal of Physiology - Heart and Circulatory Physiology, 2014, 306, H363-H372.	1.5	195

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37	Fluid shear stress induces the clustering of heparan sulfate via mobility of glypican-1 in lipid rafts. American Journal of Physiology - Heart and Circulatory Physiology, 2013, 305, H811-H820.	1.5	77
38	Cancer cell glycocalyx mediates mechanotransduction and flow-regulated invasion. Integrative Biology (United Kingdom), 2013, 5, 1334-1343.	0.6	78
39	Effect of the glycocalyx layer on transmission of interstitial flow shear stress to embedded cells. Biomechanics and Modeling in Mechanobiology, 2013, 12, 111-121.	1.4	77
40	Mechanoâ€sensing and transduction by endothelial surface glycocalyx: composition, structure, and function. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2013, 5, 381-390.	6.6	132
41	Regulation of flowâ€induced intracellular NO levels by endothelial surface glycocalyx. FASEB Journal, 2013, 27, .	0.2	0
42	Endothelial apoptosis and glycocalyx morphology in plaque and nonâ€plaque areas of the mouse atherosclerotic brachiocephalic artery. FASEB Journal, 2013, 27, 869.4.	0.2	0
43	The Structural Stability of the Endothelial Glycocalyx after Enzymatic Removal of Glycosaminoglycans. PLoS ONE, 2012, 7, e43168.	1.1	93
44	Heparan sulfate proteoglycan mediates shear stressâ€induced endothelial gene expression in mouse embryonic stem cellâ€derived endothelial cells. Biotechnology and Bioengineering, 2012, 109, 583-594.	1.7	60
45	Fluid Flow Mechanotransduction in Vascular Smooth Muscle Cells and Fibroblasts. Annals of Biomedical Engineering, 2011, 39, 1608-1619.	1.3	194
46	Imaging the Endothelial Glycocalyx In Vitro by Rapid Freezing/Freeze Substitution Transmission Electron Microscopy. Arteriosclerosis, Thrombosis, and Vascular Biology, 2011, 31, 1908-1915.	1.1	194
47	Heparan Sulfate Proteoglycans Mediate Interstitial Flow Mechanotransduction Regulating MMP-13 Expression and Cell Motility via FAK-ERK in 3D Collagen. PLoS ONE, 2011, 6, e15956.	1.1	76
48	Heparan sulfate proteoglycan mediates shear stressâ€induced endothelial gene expression in mouse embryonic stem cellâ€derived cells. FASEB Journal, 2011, 25, 1043.17.	0.2	0
49	ENDOTHELIAL GLYCOCALYX STRUCTURE AND ROLE IN MECHANOTRANSDUCTION. , 2010, , 69-95.		1
50	Permeability of Endothelial and Astrocyte Cocultures: In Vitro Bloodâ€"Brain Barrier Models for Drug Delivery Studies. Annals of Biomedical Engineering, 2010, 38, 2499-2511.	1.3	201
51	Shear Stress Modulation of Smooth Muscle Cell Marker Genes in 2-D and 3-D Depends on Mechanotransduction by Heparan Sulfate Proteoglycans and ERK1/2. PLoS ONE, 2010, 5, e12196.	1.1	68
52	Permeability of in vitro blood-brain barrier models. , 2010, , .		0
53	Shear stress and the endothelial transport barrier. Cardiovascular Research, 2010, 87, 320-330.	1.8	300
54	Interstitial flow induces vascular SMC migration in collagen I gels regulated by MMPâ€1 via an ERK1/2â€dependent and câ€Junâ€mediated mechanism. FASEB Journal, 2010, 24, 235.6.	0.2	0

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55	The role of mechanical forces in stem cell differentiation to vascular lineage. FASEB Journal, 2010, 24, 750.13.	0.2	0
56	The Endothelial Glycocalyx In Vitro : Its Structure and The Role of Heparan Sulfate and Glypicanâ€1 in eNOS Activation by Flow. FASEB Journal, 2010, 24, 784.8.	0.2	2
57	The endothelial glycocalyx mediates shear-induced changes in hydraulic conductivity. American Journal of Physiology - Heart and Circulatory Physiology, 2009, 296, H1451-H1456.	1.5	58
58	Hydraulic conductivity and solute permeability of an in vitro bloodâ€brain barrier (BBB) model. FASEB Journal, 2009, 23, 1020.2.	0.2	0
59	The Endothelial Glycocalyx: A Mechano-Sensor and -TransducerA presentation from the Experimental Biology 2008 Meeting, San Diego, CA, USA, 5 to 9 April 2008.. Science Signaling, 2008, 1, pt8.	1.6	125
60	In vitro study of LDL transport under pressurized (convective) conditions. American Journal of Physiology - Heart and Circulatory Physiology, 2007, 293, H126-H132.	1.5	82
61	The role of endothelial glycocalyx components in mechanotransduction of fluid shear stress. Biochemical and Biophysical Research Communications, 2007, 355, 228-233.	1.0	320
62	The Structure and Function of the Endothelial Glycocalyx Layer. Annual Review of Biomedical Engineering, 2007, 9, 121-167.	5.7	976
63	Oxygen Mass Transport in a Compliant Carotid Bifurcation Model. Annals of Biomedical Engineering, 2006, 34, 1389-1399.	1.3	32
64	EXPERIMENTAL FLUID MECHANICS OF PULSATILE ARTIFICIAL BLOOD PUMPS. Annual Review of Fluid Mechanics, 2006, 38, 65-86.	10.8	94
65	Cellular Fluid Mechanics and Mechanotransduction. Annals of Biomedical Engineering, 2005, 33, 1719-1723.	1.3	125
66	Shear stress inhibits smooth muscle cell migration via nitric oxide-mediated downregulation of matrix metalloproteinase-2 activity. American Journal of Physiology - Heart and Circulatory Physiology, 2005, 288, H2244-H2252.	1.5	70
67	The role of the glycocalyx in reorganization of the actin cytoskeleton under fluid shear stress: A "bumper-car" model. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 16483-16488.	3.3	277
68	Rat Aortic Smooth Muscle Cells Contract in Response to Serum and Its Components in a Calcium Independent Manner. Annals of Biomedical Engineering, 2004, 32, 1667-1675.	1.3	7
69	A transmural pressure gradient induces mechanical and biological adaptive responses in endothelial cells. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 286, H731-H741.	1.5	48
70	Mass Transport in Arteries and the Localization of Atherosclerosis. Annual Review of Biomedical Engineering, 2003, 5, 79-118.	5.7	256
71	Heparan Sulfate Proteoglycan Is a Mechanosensor on Endothelial Cells. Circulation Research, 2003, 93, e136-42.	2.0	498
72	Laser Doppler Velocimetry and Flow Visualization Studies in the Regurgitant Leakage Flow Region of Three Mechanical Mitralâ€ƒValves. Artificial Organs, 2001, 25, 292-299.	1.0	6

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73	Fenestral Pore Size in the Internal Elastic Lamina Affects Transmural Flow Distribution in the Artery Wall. Annals of Biomedical Engineering, 2001, 29, 456-466.	1.3	37
74	Fluid Dynamics of a Pediatric Ventricular Assist Device. Artificial Organs, 2000, 24, 362-372.	1.0	49
75	Numerical Simulation of Oxygen Mass Transfer in a Compliant Curved Tube Model of a Coronary Artery. Annals of Biomedical Engineering, 2000, 28, 26-38.	1.3	53
76	Interstitial flow through the internal elastic lamina affects shear stress on arterial smooth muscle cells. American Journal of Physiology - Heart and Circulatory Physiology, 2000, 278, H1589-H1597.	1.5	92
77	Effect of Fluid Flow on Smooth Muscle Cells in a 3-Dimensional Collagen Gel Model. Arteriosclerosis, Thrombosis, and Vascular Biology, 2000, 20, 2220-2225.	1.1	120
78	Numerical Simulation of Pulsatile Flow in a Compliant Curved Tube Model of a Coronary Artery. Journal of Biomechanical Engineering, 2000, 122, 77-85.	0.6	111
79	Effect of shear stress on the hydraulic conductivity of cultured bovine retinal microvascular endothelial cell monolayers. Current Eye Research, 2000, 21, 944-951.	0.7	36
80	Effect of pressure on hydraulic conductivity of endothelial monolayers: role of endothelial cleft shear stress. Journal of Applied Physiology, 1999, 87, 261-268.	1.2	61
81	MICROMIXING EFFECTS ON BARIUM SULFATE PRECIPITATION IN A DOUBLE-JET SEMI BATCH REACTOR. Chemical Engineering Communications, 1999, 176, 89-113.	1.5	18
82	Influence of Vasoactive Drugs on Wall Shear Stress Distribution in the Abdominal Aortic Bifurcation: An In Vitro Study. Annals of Biomedical Engineering, 1998, 26, 200-212.	1.3	17
83	Physiological transport properties of cultured retinal microvascular endothelial cell monolayers. Current Eye Research, 1997, 16, 761-768.	0.7	24
84	Effects of Tilting Disk Heart Valve Gap Width on Regurgitant Flow Through an Artificial Heart Mitral Valve. Artificial Organs, 1997, 21, 1014-1025.	1.0	15
85	MICROMIXING EFFECTS ON BARIUM SULFATE PRECIPITATION IN AN MSMPR REACTOR. Chemical Engineering Communications, 1996, 146, 33-56.	1.5	24
86	Macromolecular Transport Through the Deformable Porous Media of an Artery Wall. Journal of Biomechanical Engineering, 1994, 116, 156-163.	0.6	37
87	A New Mock Circulatory Loop and Its Application to the Study of Chemical Additive and Aortic Pressure Effects on Hemolysis in the Penn State Electric Ventricular Assist Device. Artificial Organs, 1994, 18, 397-407.	1.0	14
88	Influence of Blood Rheology and Vessel Wall Motion on Arterial Fluid Mechanics. Applied Mechanics Reviews, 1994, 47, S291-S295.	4.5	1
89	EFFECT OF PVA AND GELATIN ADDITIVES ON BARIUM SULFATE PRECIPITATION IN AN MSMPR REACTOR. Chemical Engineering Communications, 1993, 120, 119-137.	1.5	11
90	Effect of Hematocrit on Wall Shear Rate in Oscillatory Flow: Do the Elastic Properties of Blood Play a Role?. Biorheology, 1991, 28, 569-587.	1.2	18

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91	Flow of non-Newtonian blood analog fluids in rigid curved and straight artery models. Biorheology, 1990, 27, 711-733.	1.2	84
92	Effect of mixing on the precipitation of barium sulfate in an MSMPR reactorssss. AICHE Journal, 1990, 36, 511-522.	1.8	74