Christopher G Ellis

List of Publications by Year
in descending order

111 papers	3,953 citations	109321 35 h-index	128289 60 g-index
113 all docs	113 docs citations	113 times ranked	3440 citing authors

#	Article	IF	Citations
1	Effect of a maldistribution of microvascular blood flow on capillary O₂ extraction in sepsis. American Journal of Physiology - Heart and Circulatory Physiology, 2002, 282, H156-H164.	3.2	264
2	Erythrocytes: Oxygen Sensors and Modulators of Vascular Tone. Physiology, 2009, 24, 107-116.	3.1	247
3	Bench-to-bedside review: microvascular dysfunction in sepsis--hemodynamics, oxygen transport, and nitric oxide. Critical Care, 2003, 7, 359.	5.8	242
4	Decreased Capillary Densityin Vivoin Bowel Mucosa of Rats with Normotensive Sepsis. Journal of Surgical Research, 1996, 61, 190-196.	1.6	216
5	Early mobilization in the critical care unit: A review of adult and pediatric literature. Journal of Critical Care, 2015, 30, 664-672.	2.2	203
6	A comparison of biochemical and functional alterations of rat and human erythrocytes stored in CPDAâ€1 for 29â€ƒdays: implications for animal models of transfusion. Transfusion Medicine, 2000, 10, 291-303.	1.1	141
7	The microcirculation as a functional system. Critical Care, 2005, 9, S3.	5.8	130
8	Erythrocyte deformability is a nitric oxide-mediated factor in decreased capillary density during sepsis. American Journal of Physiology - Heart and Circulatory Physiology, 2001, 280, H2848-H2856.	3.2	110
9	The Effect of Sepsis on the Erythrocyte. International Journal of Molecular Sciences, 2017, 18, 1932.	4.1	108
10	Fibroblast growth factor 9 delivery during angiogenesis produces durable, vasoresponsive microvessels wrapped by smooth muscle cells. Nature Biotechnology, 2011, 29, 421-427.	17.5	107
11	Effect of decreased O2 supply on skeletal muscle oxygenation and O2 consumption during sepsis: role of heterogeneous capillary spacing and blood flow. American Journal of Physiology - Heart and Circulatory Physiology, 2006, 290, H2277-H2285.	3.2	105
12	Heterogeneity of red blood cell perfusion in capillary networks supplied by a single arteriole in resting skeletal muscle.. Circulation Research, 1994, 75, 357-368.	4.5	90
13	Application of image analysis for evaluation of red blood cell dynamics in capillaries. Microvascular Research, 1992, 44, 214-225.	2.5	88
14	Impaired microvascular perfusion in sepsis requires activated coagulation and P-selectin-mediated platelet adhesion in capillaries. Intensive Care Medicine, 2010, 36, 1928-1934.	8.2	88
15	Effect of sepsis on skeletal muscle oxygen consumption and tissue oxygenation: interpreting capillary oxygen transport data using a mathematical model. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 287, H2535-H2544.	3.2	85
16	Fibroblast Growth Factor-2 Potentiates Vascular Smooth Muscle Cell Migration to Platelet-Derived Growth Factor. Circulation Research, 1997, 80, 627-637.	4.5	66
17	Role of erythrocyte-released ATP in the regulation ofÂmicrovascular oxygen supply in skeletal muscle. Acta Physiologica, 2016, 216, 265-276.	3.8	63
18	Four-Dimensional Microvascular Analysis Reveals That Regenerative Angiogenesis in Ischemic Muscle Produces a Flawed Microcirculation. Circulation Research, 2017, 120, 1453-1465.	4.5	57

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19	A New Video Image Analysis System to Study Red Blood Cell Dynamics and Oxygenation in Capillary Networks. Microcirculation, 2005, 12, 489-506.	1.8	54
20	Inhibiting nitric oxide overproduction during hypotensive sepsis increases local oxygen consumption in rat skeletal muscle*. Critical Care Medicine, 2008, 36, 225-231.	0.9	53
21	Sepsis impairs microvascular autoregulation and delays capillary response within hypoxic capillaries. Critical Care, 2015, 19, 389.	5.8	49
22	Defects in oxygen supply to skeletal muscle of prediabetic ZDF rats. American Journal of Physiology - Heart and Circulatory Physiology, 2010, 298, H1661-H1670.	3.2	48
23	Flow Visualization Tools for Image Analysis of Capillary Networks. Microcirculation, 2004, 11, 39-54.	1.8	46
24	Role and Molecular Mechanisms of Pericytes in Regulation of Leukocyte Diapedesis in Inflamed Tissues. Mediators of Inflammation, 2019, 2019, 1-9.	3.0	46
25	Effect of prophylactic transfusion of stored RBCs on oxygen reserve in response to acute isovolemic hemorrhage in a rodent model. Transfusion, 2001, 41, 950-956.	1.6	45
26	Microvascular Responsiveness to Pulsatile and Nonpulsatile Flow During Cardiopulmonary Bypass. Annals of Thoracic Surgery, 2018, 105, 1745-1753.	1.3	44
27	Optimization of Nitric Oxide Chemiluminescence Operating Conditions for Measurement of Plasma Nitrite and Nitrate. Clinical Chemistry, 2002, 48, 570-573.	3.2	43
28	Aortic valve cusp vessel density: Relationship with tissue thickness. Journal of Thoracic and Cardiovascular Surgery, 2002, 123, 333-340.	0.8	42
29	Divergent effects of low-O₂tension and iloprost on ATP release from erythrocytes of humans with type 2 diabetes: implications for O₂supply to skeletal muscle. American Journal of Physiology - Heart and Circulatory Physiology, 2010, 299, H566-H573.	3.2	41
30	Transfusion of stored red blood cells adhere in the rat microvasculature. Transfusion, 2009, 49, 2304-2310.	1.6	40
31	Effect of sarcomere length on total capillary length in skeletal muscle: In vivo evidence for longitudinal stretching of capillaries. Microvascular Research, 1990, 40, 63-72.	2.5	39
32	Capillary configuration and fiber shortening in muscles of the rat hindlimb: Correlation between corrosion casts and stereological measurements. Microvascular Research, 1988, 36, 40-55.	2.5	38
33	Temporal and spatial distributions of red cell velocity in capillaries of resting skeletal muscle, including estimates of red cell transit times. Microvascular Research, 1981, 22, 14-31.	2.5	37
34	A selective phosphodiesterase 3 inhibitor rescues low P<scp>o</scp>₂-induced ATP release from erythrocytes of humans with type 2 diabetes: implication for vascular control. American Journal of Physiology - Heart and Circulatory Physiology, 2011, 301, H2466-H2472.	3.2	37
35	Mass transport to walls of stenosed arteries: Variation with Reynolds number and blood flow separation. Journal of Biomechanics, 1979, 12, 869-877.	2.1	36
36	Automated Method for Tracking Individual Red Blood Cells Within Capillaries to Compute Velocity and Oxygen Saturation. Microcirculation, 2005, 12, 507-515.	1.8	36

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37	Mapping 3-D functional capillary geometry in rat skeletal muscle in vivo. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H654-H664.	3.2	32
38	What is the Efficiency of ATP Signaling from Erythrocytes to Regulate Distribution of O₂ Supply Within the Microvasculature?. Microcirculation, 2012, 19, 440-450.	1.8	32
39	Sepsis depresses the metabolic oxygen reserve of the coronary circulation in mature sheep.. American Journal of Respiratory and Critical Care Medicine, 1996, 153, 1577-1584.	5.6	31
40	Mapping of the functional microcirculation in vital organs using contrast-enhanced in vivo video microscopy. American Journal of Physiology - Heart and Circulatory Physiology, 2005, 288, H185-H193.	3.2	28
41	Ability of man to detect increases in his breathing. Journal of Applied Physiology, 1975, 39, 372-376.	2.5	27
42	Role of Microvessels in Oxygen Supply to Tissue. Physiology, 1994, 9, 119-123.	3.1	27
43	Microvascular Flow Modeling using In Vivo Hemodynamic Measurements in Reconstructed 3D Capillary Networks. Microcirculation, 2012, 19, 510-520.	1.8	27
44	Capillary Network Morphology and Capillary Flow. International Journal of Microcirculation, Clinical and Experimental, 1995, 15, 223-230.	0.5	26
45	Influence of tissue metabolism and capillary oxygen supply on arteriolar oxygen transport: A computational model. Mathematical Biosciences, 2011, 232, 1-10.	1.9	25
46	Measurement of the lineal density of red blood cells in capillaries in vivo, using a computerized frame-by-frame analysis of video images. Microvascular Research, 1984, 27, 1-13.	2.5	22
47	In vivo videomicroscopy reveals differential effects of the vascular-targeting agent ZD6126 and the anti-angiogenic agent ZD6474 on vascular function in a liver metastasis model. Angiogenesis, 2004, 7, 157-164.	7.2	22
48	Comparison of Generated Parallel Capillary Arrays to Threeâ€Dimensional Reconstructed Capillary Networks in Modeling Oxygen Transport in Discrete Microvascular Volumes. Microcirculation, 2013, 20, 748-763.	1.8	22
49	Toward a Multiscale Description of Microvascular Flow Regulation: O2-Dependent Release of ATP from Human Erythrocytes and the Distribution of ATP in Capillary Networks. Frontiers in Physiology, 2012, 3, 246.	2.8	21
50	Effect of extraluminal ATP application on vascular tone and blood flow in skeletal muscle: implications for exercise hyperemia. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2013, 305, R281-R290.	1.8	20
51	Impaired Tissue Oxygenation in Metabolic Syndrome Requires Increased Microvascular Perfusion Heterogeneity. Journal of Cardiovascular Translational Research, 2017, 10, 69-81.	2.4	20
52	The capillary fascicle in skeletal muscle: Structural and functional physiology of RBC distribution in capillary networks. Journal of Physiology, 2021, 599, 2149-2168.	2.9	17
53	A Micro-Delivery Approach for Studying Microvascular Responses to Localized Oxygen Delivery. Microcirculation, 2011, 18, 646-654.	1.8	16
54	Ascorbate inhibits platelet-endothelial adhesion in an in-vitro model of sepsis via reduced endothelial surface P-selectin expression. Blood Coagulation and Fibrinolysis, 2017, 28, 28-33.	1.0	16

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55	The Functional Microcirculation in a Glioma Model. International Journal of Radiation Biology, 1991, 60, 131-137.	1.8	15
56	S-Nitrosoglutathione Acts as a Small Molecule Modulator of Human Fibrin Clot Architecture. PLoS ONE, 2012, 7, e43660.	2.5	15
57	Modeling steady state SO2-dependent changes in capillary ATP concentration using novel O2 micro-delivery methods. Frontiers in Physiology, 2013, 4, 260.	2.8	14
58	Hyperinsulinemia does not cause de novo capillary recruitment in rat skeletal muscle. Microcirculation, 2020, 27, e12593.	1.8	14
59	Optimization of nitric oxide chemiluminescence operating conditions for measurement of plasma nitrite and nitrate. Clinical Chemistry, 2002, 48, 570-3.	3.2	14
60	A finite difference model of O2 transport in aortic valve cusps: importance of intrinsic microcirculation. American Journal of Physiology - Heart and Circulatory Physiology, 2003, 285, H2099-H2104.	3.2	13
61	Fibroblast Growth Factor 9 Imparts Hierarchy and Vasoreactivity to the Microcirculation of Renal Tumors and Suppresses Metastases. Journal of Biological Chemistry, 2015, 290, 22127-22142.	3.4	13
62	Television-computer method for in vivo measurement of capillary diameter, based on the passage of red cells. Microvascular Research, 1983, 26, 139-150.	2.5	12
63	Ascorbate Reduces Mouse Platelet Aggregation and Surface Pâ€Selectin Expression in an Ex Vivo Model of Sepsis. Microcirculation, 2013, 20, 502-510.	1.8	12
64	Microvascular Geometry in Relation to Modeling Oxygen Transport in Contracted Skeletal Muscle^{1â€“}³. The American Review of Respiratory Disease, 1984, 129, S6-S9.	2.9	11
65	Measurement of Tissue Viability Using Intravital Microscopy and Fluorescent Nuclear Dyes. Journal of Surgical Research, 1995, 59, 521-526.	1.6	11
66	High-Resolution Intravital NADH Fluorescence Microscopy Allows Measurements of Tissue Bioenergetics in Rat Ileal Mucosa. Microcirculation, 2006, 13, 41-47.	1.8	11
67	Heterogeneity of capillary diameters in skeletal muscle of the frog. Microvascular Research, 1983, 26, 151-156.	2.5	10
68	Quantification of red cell movement in microvessels: A new application of interactive computer graphics. Microvascular Research, 1987, 33, 428-432.	2.5	10
69	Effect of nitric oxide on capillary hemodynamics and cell injury in the pancreas duringPseudomonaspneumonia-induced sepsis. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 286, H340-H345.	3.2	10
70	Estrogen modulates the contribution of neuropeptide Y to baseline hindlimb blood flow control in female Sprague-Dawley rats. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2010, 298, R1351-R1357.	1.8	10
71	A Computational Model of a Microfluidic Device to Measure the Dynamics of Oxygen-Dependent ATP Release from Erythrocytes. PLoS ONE, 2013, 8, e81537.	2.5	9
72	Impact of Incremental Perfusion Loss on Oxygen Transport in a Capillary Network Mathematical Model. Microcirculation, 2015, 22, 348-359.	1.8	9

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73	Evidence for role of capillaries in regulation of skeletal muscle oxygen supply. Microcirculation, 2021, 28, e12699.	1.8	9
74	Low-flow intussusception and metastable VEGFR2 signaling launch angiogenesis in ischemic muscle. Science Advances, 2021, 7, eabg9509.	10.3	9
75	Highâ€fat diet preâ€conditioning improves microvascular remodelling during regeneration of ischaemic mouse skeletal muscle. Acta Physiologica, 2020, 229, e13449.	3.8	7
76	Effect of Superoxide Dismutase and 21-Aminosteroids (Lazaroids) on Microvascular Perfusion following Ischemia-Reperfusion in Skeletal Muscle. International Journal of Microcirculation, Clinical and Experimental, 1994, 14, 313-318.	0.5	6
77	Effect of ascorbate on plasminogen activator inhibitor-1 expression and release from platelets and endothelial cells in an in-vitro model of sepsis. Blood Coagulation and Fibrinolysis, 2015, 26, 436-442.	1.0	6
78	Localized Oxygen Exchange Platform for Intravital Video Microscopy Investigations of Microvascular Oxygen Regulation. Frontiers in Physiology, 2021, 12, 654928.	2.8	6
79	Cerebral Blood Flow Deviations in Critically Ill Patients: Potential Insult Contributing to Ischemic and Hyperemic Injury. Frontiers in Medicine, 2020, 7, 615318.	2.6	6
80	A precise radiographic technique for the measurement of dimensional changes in heart valve biomaterials following fixation. Journal of Biomechanics, 2002, 35, 983-987.	2.1	5
81	Short-term effect of ascorbate on bacterial content, plasminogen activator inhibitor-1, and myeloperoxidase in septic mice. Journal of Surgical Research, 2014, 191, 432-440.	1.6	5
82	National Preclinical Sepsis Platform: developing a framework for accelerating innovation in Canadian sepsis research. Intensive Care Medicine Experimental, 2021, 9, 14.	1.9	5
83	Spectroscopy detects skeletal muscle microvascular dysfunction during onset of sepsis in a rat fecal peritonitis model. Scientific Reports, 2022, 12, 6339.	3.3	5
84	Effect of Hemolyzed Plasma on the Batch Measurement of Nitrate by Nitric Oxide Chemiluminescence. Clinical Chemistry, 2001, 47, 1847-1851.	3.2	4
85	Dynamic tracking of microvascular hemoglobin content for continuous perfusion monitoring in the intensive care unit: pilot feasibility study. Journal of Clinical Monitoring and Computing, 2021, 35, 1453-1465.	1.6	4
86	Variation in Axial Velocity Profile of Red Cells Passing Through A Single Capillary. Advances in Experimental Medicine and Biology, 1989, 248, 543-550.	1.6	4
87	Finite Element Model of Oxygen Transport for the Design of Geometrically Complex Microfluidic Devices Used in Biological Studies. PLoS ONE, 2016, 11, e0166289.	2.5	4
88	Effect of ascorbate on fibrinolytic factors in septic mouse skeletal muscle. Blood Coagulation and Fibrinolysis, 2014, 25, 745-753.	1.0	3
89	Reply to Letter to the Editor: Perfusion controls muscle glucose uptake by altering the rate of glucose dispersion in vivo. American Journal of Physiology - Endocrinology and Metabolism, 2020, 318, E313-E317.	3.5	3
90	Capillary module haemodynamics and mechanisms of blood flow regulation in skeletal muscle capillary networks: Experimental and computational analysis. Journal of Physiology, 2022, 600, 1867-1888.	2.9	3

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91	Local regulation of oxygen supply in rat skeletal muscle in vivo: variations in hemodynamic response. FASEB Journal, 2007, 21, A481.	0.5	2
92	RBC dynamics in reuniting capillary bifurcations. Biorheology, 1995, 32, 282-282.	0.4	1
93	An experiment-based model of oxygen transport in capillary networks under normal and septic conditions. , 0, , .		1
94	Microvascular oxygen transport in rat skeletal muscle: temporal variability. FASEB Journal, 2006, 20, A278.	0.5	1
95	Optical Method to Determine inâ€vivo Capillary Hematocrit, Hemoglobin Concentration, and 3â€Ð Network Geometry in Skeletal Muscle. Microcirculation, 2022, , e12751.	1.8	1
96	Autocrine P2X4 receptor activation in RBCs drives oxygenâ€dependent hyperemic responses in mouse skeletal muscle capillaries. FASEB Journal, 2022, 36, .	0.5	1
97	Vascularization of bioprosthetic valve material. , 1999, , .		0
98	Using digital inpainting to estimate incident light intensity for the calculation of red blood cell oxygen saturation from microscopy images. Journal of Biophotonics, 2018, 11, e201800103.	2.3	0
99	Modeling the hemodynamic response in capillaries to an altered tissue oxygen environment. FASEB Journal, 2007, 21, A480.	0.5	0
100	Characterization of Impaired Microvascular Oxygen Delivery in Early Septic Injury. FASEB Journal, 2007, 21, A480.	0.5	0
101	Modeling the hemodynamic response due to vasodilatory signals conducted upstream along the arteriolar tree. FASEB Journal, 2008, 22, 1207.6.	0.5	0
102	Mathematical Model of Tissue Oxygenation in Early Sepsis. FASEB Journal, 2008, 22, 1141.19.	0.5	0
103	Characterizing the Response of Skeletal Muscle Microvasculature to Imposed Oxygen Variations. FASEB Journal, 2009, 23, 949.8.	0.5	0
104	Erythrocyte (RBC)â€Released ATP and Vascular Control: When it Works and What if it Does Not?. FASEB Journal, 2009, 23, 948.5.	0.5	0
105	Investigating the hemodynamic parameters involved in microvasculature O2 regulation in skeletal muscle of Zucker Diabetic Fatty rat exposed to surface hypoxia. FASEB Journal, 2010, 24, 973.13.	0.5	0
106	Efficacy of Parallel Capillary Arrays in Modelling Oxygen Transport in Discrete Microvascular Networks. FASEB Journal, 2010, 24, 973.5.	0.5	0
107	Sympathetic modulation of baseline hindlimb blood flow and vascular conductance in a model of prediabetes using young Zucker Diabetic Fatty rats. FASEB Journal, 2010, 24, 976.15.	0.5	0
108	Computational Analysis of a Microfluidic Device for Measuring Oxygenâ€Dependent ATP Release from Erythrocytes. FASEB Journal, 2012, 26, .	0.5	0

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109	Mathematical Model of Mixed Venous SO 2 Transients at Onset of Exercise in Discrete Capillary Networks. FASEB Journal, 2012, 26, 1142.12.	0.5	0
110	Microvascular Dysfunction, Inflammation and Tissue Injury in Polymicrobial Sepsis. FASEB Journal, 2018, 32, lb282.	0.5	0
111	Conducted Capillary Signaling Enables Oxygen Responses in Skeletal Muscle Independent of Metabolite Production. FASEB Journal, 2022, 36, .	0.5	0