# Aleksander S Popel

## List of Publications by Citations



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|---|---|---|---|
| 295 papers | 11,080 citations | 56 h-index | 88 g-index |
| 322 ext. papers | 12,749 ext. citations | 4.4 avg, IF | 6.67 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 295 | Microcirculation and Hemorheology. *Annual Review of Fluid Mechanics*, **2005**, 37, 43-69 | 22 | 569 |
| 294 | A theoretical analysis of the effect of the particulate nature of blood on oxygen release in capillaries. *Microvascular Research*, **1986**, 32, 164-89 | 3.7 | 234 |
| 293 | Extracellular regulation of VEGF: isoforms, proteolysis, and vascular patterning. *Cytokine and Growth Factor Reviews*, **2014**, 25, 1-19 | 17.9 | 198 |
| 292 | Where is VEGF in the body? A meta-analysis of VEGF distribution in cancer. *British Journal of Cancer*, **2007**, 97, 978-85 | 8.7 | 197 |
| 291 | Red blood cell aggregation and dissociation in shear flows simulated by lattice Boltzmann method. *Journal of Biomechanics*, **2008**, 41, 47-55 | 2.9 | 197 |
| 290 | Blood flow and cell-free layer in microvessels. *Microcirculation*, **2010**, 17, 615-28 | 2.9 | 168 |
| 289 | A computational study of the effect of capillary network anastomoses and tortuosity on oxygen transport. *Journal of Theoretical Biology*, **2000**, 206, 181-94 | 2.3 | 160 |
| 288 | Impaired angiogenesis after hindlimb ischemia in type 2 diabetes mellitus: differential regulation of vascular endothelial growth factor receptor 1 and soluble vascular endothelial growth factor receptor 1. *Circulation Research*, **2007**, 101, 948-56 | 15.7 | 158 |
| 287 | Effects of erythrocyte deformability and aggregation on the cell free layer and apparent viscosity of microscopic blood flows. *Microvascular Research*, **2009**, 77, 265-72 | 3.7 | 157 |
| 286 | Effect of erythrocyte aggregation on velocity profiles in venules. *American Journal of Physiology - Heart and Circulatory Physiology*, **2001**, 280, H222-36 | 5.2 | 148 |
| 285 | An immersed boundary lattice Boltzmann approach to simulate deformable liquid capsules and its application to microscopic blood flows. *Physical Biology*, **2007**, 4, 285-95 | 3 | 139 |
| 284 | Reactive oxygen species regulate hypoxia-inducible factor 1alpha differentially in cancer and ischemia. *Molecular and Cellular Biology*, **2008**, 28, 5106-19 | 4.8 | 138 |
| 283 | Nitric oxide in the vasculature: where does it come from and where does it go? A quantitative perspective. *Antioxidants and Redox Signaling*, **2008**, 10, 1185-98 | 8.4 | 137 |
| 282 | A systems biology perspective on sVEGFR1: its biological function, pathogenic role and therapeutic use. *Journal of Cellular and Molecular Medicine*, **2010**, 14, 528-52 | 5.6 | 135 |
| 281 | A membrane bending model of outer hair cell electromotility. *Biophysical Journal*, **2000**, 78, 2844-62 | 2.9 | 129 |
| 280 | Micro- and nanomechanics of the cochlear outer hair cell. *Annual Review of Biomedical Engineering*, **2001**, 3, 169-94 | 12 | 129 |
| 279 | Computational fluid dynamic simulation of aggregation of deformable cells in a shear flow. *Journal of Biomechanical Engineering*, **2005**, 127, 1070-80 | 2.1 | 120 |

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| 278 | Anti-angiogenic peptides for cancer therapeutics. *Current Pharmaceutical Biotechnology*, **2011**, 12, 1101-16 | 1.6 | 119 |
| 277 | Systems biology of vascular endothelial growth factors. *Microcirculation*, **2008**, 15, 715-38 | 2.9 | 118 |
| 276 | Multiscale models of angiogenesis. *IEEE Engineering in Medicine and Biology Magazine*, **2009**, 28, 14-31 | | 116 |
| 275 | Temporal and spatial variations of cell-free layer width in arterioles. *American Journal of Physiology - Heart and Circulatory Physiology*, **2007**, 293, H1526-35 | 5.2 | 114 |
| 274 | Breast cancer cells condition lymphatic endothelial cells within pre-metastatic niches to promote metastasis. *Nature Communications*, **2014**, 5, 4715 | 17.4 | 108 |
| 273 | Assessment and impact of heterogeneities of convective oxygen transport parameters in capillaries of striated muscle: experimental and theoretical. *Microvascular Research*, **1988**, 35, 341-62 | 3.7 | 101 |
| 272 | Model of competitive binding of vascular endothelial growth factor and placental growth factor to VEGF receptors on endothelial cells. *American Journal of Physiology - Heart and Circulatory Physiology*, **2004**, 286, H153-64 | 5.2 | 100 |
| 271 | A compartment model of VEGF distribution in blood, healthy and diseased tissues. *BMC Systems Biology*, **2008**, 2, 77 | 3.5 | 99 |
| 270 | Elongation, proliferation & migration differentiate endothelial cell phenotypes and determine capillary sprouting. *BMC Systems Biology*, **2009**, 3, 13 | 3.5 | 93 |
| 269 | A systems biology view of blood vessel growth and remodelling. *Journal of Cellular and Molecular Medicine*, **2014**, 18, 1491-508 | 5.6 | 92 |
| 268 | Dimerization of VEGF receptors and implications for signal transduction: a computational study. *Biophysical Chemistry*, **2007**, 128, 125-39 | 3.5 | 90 |
| 267 | Effects of endothelial cell proliferation and migration rates in a computational model of sprouting angiogenesis. *Scientific Reports*, **2016**, 6, 36992 | 4.9 | 80 |
| 266 | A compartmental model for oxygen transport in brain microcirculation. *Annals of Biomedical Engineering*, **1989**, 17, 13-38 | 4.7 | 78 |
| 265 | Quantification and cell-to-cell variation of vascular endothelial growth factor receptors. *Experimental Cell Research*, **2011**, 317, 955-65 | 4.2 | 76 |
| 264 | VEGF gradients, receptor activation, and sprout guidance in resting and exercising skeletal muscle. *Journal of Applied Physiology*, **2007**, 102, 722-34 | 3.7 | 76 |
| 263 | A computational study of the effect of vasomotion on oxygen transport from capillary networks. *Journal of Theoretical Biology*, **2001**, 209, 189-99 | 2.3 | 75 |
| 262 | Effect of red blood cell shape on oxygen transport in capillaries. *Mathematical Biosciences*, **1993**, 116, 89-110 | 3.9 | 75 |
| 261 | Theoretical analysis of biochemical pathways of nitric oxide release from vascular endothelial cells. *Free Radical Biology and Medicine*, **2006**, 41, 668-80 | 7.8 | 72 |

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| 260 | A biochemical model of matrix metalloproteinase 9 activation and inhibition. *Journal of Biological Chemistry*, **2007**, 282, 37585-96 | 5.4 | 72 |
| 259 | Systems biology of pro-angiogenic therapies targeting the VEGF system. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2010**, 2, 694-707 | 6.6 | 70 |
| 258 | Effect of tumor microenvironment on tumor VEGF during anti-VEGF treatment: systems biology predictions. *Journal of the National Cancer Institute*, **2013**, 105, 802-11 | 9.7 | 69 |
| 257 | Interactions of VEGF isoforms with VEGFR-1, VEGFR-2, and neuropilin in vivo: a computational model of human skeletal muscle. *American Journal of Physiology - Heart and Circulatory Physiology*, **2007**, 292, H459-74 | 5.2 | 69 |
| 256 | A computational model of intracellular oxygen sensing by hypoxia-inducible factor HIF1 alpha. *Journal of Cell Science*, **2006**, 119, 3467-80 | 5.3 | 68 |
| 255 | Model of nitric oxide diffusion in an arteriole: impact of hemoglobin-based blood substitutes. *American Journal of Physiology - Heart and Circulatory Physiology*, **2002**, 282, H2245-53 | 5.2 | 68 |
| 254 | A theoretical model of type I collagen proteolysis by matrix metalloproteinase (MMP) 2 and membrane type 1 MMP in the presence of tissue inhibitor of metalloproteinase 2. *Journal of Biological Chemistry*, **2004**, 279, 39105-14 | 5.4 | 66 |
| 253 | A reaction-diffusion model of basic fibroblast growth factor interactions with cell surface receptors. *Annals of Biomedical Engineering*, **2004**, 32, 645-63 | 4.7 | 66 |
| 252 | Increase of plasma VEGF after intravenous administration of bevacizumab is predicted by a pharmacokinetic model. *Cancer Research*, **2010**, 70, 9886-94 | 10.1 | 65 |
| 251 | A computational multiscale agent-based model for simulating spatio-temporal tumour immune response to PD1 and PDL1 inhibition. *Journal of the Royal Society Interface*, **2017**, 14, | 4.1 | 64 |
| 250 | Blood-plasma separation in Y-shaped bifurcating microfluidic channels: a dissipative particle dynamics simulation study. *Physical Biology*, **2012**, 9, 026010 | 3 | 64 |
| 249 | Differential binding of VEGF isoforms to VEGF receptor 2 in the presence of neuropilin-1: a computational model. *American Journal of Physiology - Heart and Circulatory Physiology*, **2005**, 288, H2851-60 | 5.2 | 64 |
| 248 | Wall shear stress differentially affects NO level in arterioles for volume expanders and Hb-based O2 carriers. *Microvascular Research*, **2003**, 66, 49-58 | 3.7 | 63 |
| 247 | Multiscale Agent-Based and Hybrid Modeling of the Tumor Immune Microenvironment. *Processes*, **2019**, 7, | 2.9 | 61 |
| 246 | A systematic methodology for proteome-wide identification of peptides inhibiting the proliferation and migration of endothelial cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 13775-80 | 11.5 | 61 |
| 245 | Contribution of nNOS- and eNOS-derived NO to microvascular smooth muscle NO exposure. *Journal of Applied Physiology*, **2004**, 97, 293-301 | 3.7 | 60 |
| 244 | Quantifying the proteolytic release of extracellular matrix-sequestered VEGF with a computational model. *PLoS ONE*, **2010**, 5, e11860 | 3.7 | 59 |
| 243 | A theoretical analysis of intracellular oxygen diffusion. *Journal of Theoretical Biology*, **1995**, 176, 433-45 | 2.3 | 59 |

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| 242 | A theoretical model of nitric oxide transport in arterioles: frequency- vs. amplitude-dependent control of cGMP formation. *American Journal of Physiology - Heart and Circulatory Physiology*, **2004**, 286, H1043-56 | 5.2 | 58 |
| 241 | Erythrocyte consumption of nitric oxide in presence and absence of plasma-based hemoglobin. *American Journal of Physiology - Heart and Circulatory Physiology*, **2002**, 282, H2265-77 | 5.2 | 58 |
| 240 | Endothelial cells decode VEGF-mediated Ca2+ signaling patterns to produce distinct functional responses. *Science Signaling*, **2016**, 9, ra20 | 8.8 | 56 |
| 239 | Crosstalk between cancer cells and blood endothelial and lymphatic endothelial cells in tumour and organ microenvironment. *Expert Reviews in Molecular Medicine*, **2015**, 17, e3 | 6.7 | 55 |
| 238 | Targeting neuropilin-1 to inhibit VEGF signaling in cancer: Comparison of therapeutic approaches. *PLoS Computational Biology*, **2006**, 2, e180 | 5 | 55 |
| 237 | A computer-based method for determination of the cell-free layer width in microcirculation. *Microcirculation*, **2006**, 13, 199-207 | 2.9 | 55 |
| 236 | Distinct modes of collagen type I proteolysis by matrix metalloproteinase (MMP) 2 and membrane type I MMP during the migration of a tip endothelial cell: insights from a computational model. *Journal of Theoretical Biology*, **2006**, 238, 124-45 | 2.3 | 55 |
| 235 | Effect of aggregation and shear rate on the dispersion of red blood cells flowing in venules. *American Journal of Physiology - Heart and Circulatory Physiology*, **2002**, 283, H1985-96 | 5.2 | 55 |
| 234 | A compartment model of VEGF distribution in humans in the presence of soluble VEGF receptor-1 acting as a ligand trap. *PLoS ONE*, **2009**, 4, e5108 | 3.7 | 54 |
| 233 | Module-based multiscale simulation of angiogenesis in skeletal muscle. *Theoretical Biology and Medical Modelling*, **2011**, 8, 6 | 2.3 | 53 |
| 232 | Nitric oxide from nitrite reduction by hemoglobin in the plasma and erythrocytes. *Nitric Oxide - Biology and Chemistry*, **2008**, 18, 47-60 | 5 | 53 |
| 231 | A computational model of oxygen transport in skeletal muscle for sprouting and splitting modes of angiogenesis. *Journal of Theoretical Biology*, **2006**, 241, 94-108 | 2.3 | 53 |
| 230 | Estimating oxygen transport resistance of the microvascular wall. *American Journal of Physiology - Heart and Circulatory Physiology*, **2000**, 279, H657-71 | 5.2 | 53 |
| 229 | Oxygen transport in resting and contracting hamster cremaster muscles: experimental and theoretical microvascular studies. *Microvascular Research*, **1983**, 25, 108-31 | 3.7 | 53 |
| 228 | A bioimage informatics based reconstruction of breast tumor microvasculature with computational blood flow predictions. *Microvascular Research*, **2014**, 91, 8-21 | 3.7 | 52 |
| 227 | Formation of VEGF isoform-specific spatial distributions governing angiogenesis: computational analysis. *BMC Systems Biology*, **2011**, 5, 59 | 3.5 | 52 |
| 226 | Computational model of vascular endothelial growth factor spatial distribution in muscle and pro-angiogenic cell therapy. *PLoS Computational Biology*, **2006**, 2, e127 | 5 | 52 |
| 225 | Endothelial cell-by-cell profiling reveals the temporal dynamics of VEGFR1 and VEGFR2 membrane localization after murine hindlimb ischemia. *American Journal of Physiology - Heart and Circulatory Physiology*, **2013**, 304, H1085-93 | 5.2 | 51 |

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| 224 | Theoretical models for coronary vascular biomechanics: progress & challenges. *Progress in Biophysics and Molecular Biology*, **2011**, 104, 49-76 | 4.7 | 51 |
| 223 | Pharmacokinetics and pharmacodynamics of VEGF-neutralizing antibodies. *BMC Systems Biology*, **2011**, 5, 193 | 3.5 | 51 |
| 222 | Identification of novel short peptides derived from the alpha 4, alpha 5, and alpha 6 fibrils of type IV collagen with anti-angiogenic properties. *Biochemical and Biophysical Research Communications*, **2007**, 354, 434-9 | 3.4 | 51 |
| 221 | Calculations of intracapillary oxygen tension distributions in muscle. *Mathematical Biosciences*, **2000**, 167, 123-43 | 3.9 | 51 |
| 220 | Calculations of oxygen transport by red blood cells and hemoglobin solutions in capillaries. *Artificial Cells, Blood Substitutes, and Biotechnology*, **2002**, 30, 157-88 | | 50 |
| 219 | Skeletal muscle VEGF gradients in peripheral arterial disease: simulations of rest and exercise. *American Journal of Physiology - Heart and Circulatory Physiology*, **2007**, 293, H3740-9 | 5.2 | 49 |
| 218 | The cost of departure from optimal radii in microvascular networks. *Journal of Theoretical Biology*, **1989**, 136, 245-65 | 2.3 | 49 |
| 217 | Effect of outer hair cell piezoelectricity on high-frequency receptor potentials. *Journal of the Acoustical Society of America*, **2003**, 113, 453-61 | 2.2 | 48 |
| 216 | Effects of erythrocyte aggregation and venous network geometry on red blood cell axial migration. *American Journal of Physiology - Heart and Circulatory Physiology*, **2001**, 281, H939-50 | 5.2 | 48 |
| 215 | Multi-scale Modeling in Clinical Oncology: Opportunities and Barriers to Success. *Annals of Biomedical Engineering*, **2016**, 44, 2626-41 | 4.7 | 48 |
| 214 | Peptides derived from type IV collagen, CXC chemokines, and thrombospondin-1 domain-containing proteins inhibit neovascularization and suppress tumor growth in MDA-MB-231 breast cancer xenografts. *Neoplasia*, **2009**, 11, 1285-91 | 6.4 | 47 |
| 213 | Gene delivery nanoparticles to modulate angiogenesis. *Advanced Drug Delivery Reviews*, **2017**, 119, 20-43 | 18.5 | 46 |
| 212 | Aggregate formation of erythrocytes in postcapillary venules. *American Journal of Physiology - Heart and Circulatory Physiology*, **2005**, 288, H584-90 | 5.2 | 46 |
| 211 | Predicting the effects of anti-angiogenic agents targeting specific VEGF isoforms. *AAPS Journal*, **2012**, 14, 500-9 | 3.7 | 45 |
| 210 | The presence of VEGF receptors on the luminal surface of endothelial cells affects VEGF distribution and VEGF signaling. *PLoS Computational Biology*, **2009**, 5, e1000622 | 5 | 45 |
| 209 | Experimental and theoretical studies of oxygen gradients in rat pial microvessels. *Journal of Cerebral Blood Flow and Metabolism*, **2008**, 28, 1597-604 | 7.3 | 45 |
| 208 | A computational model of oxygen delivery by hemoglobin-based oxygen carriers in three-dimensional microvascular networks. *Journal of Theoretical Biology*, **2007**, 248, 657-74 | 2.3 | 45 |
| 207 | Expression of VEGF receptors on endothelial cells in mouse skeletal muscle. *PLoS ONE*, **2012**, 7, e44791 | 3.7 | 45 |

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| 206 | Simultaneous blockade of IL-6 and CCL5 signaling for synergistic inhibition of triple-negative breast cancer growth and metastasis. *Breast Cancer Research*, **2018**, 20, 54 | 8.3 | 41 |
| 205 | Long-term suppression of ocular neovascularization by intraocular injection of biodegradable polymeric particles containing a serpin-derived peptide. *Biomaterials*, **2013**, 34, 7544-51 | 15.6 | 41 |
| 204 | Quantitative fluorescent profiling of VEGFRs reveals tumor cell and endothelial cell heterogeneity in breast cancer xenografts. *Cancer Medicine*, **2014**, 3, 225-44 | 4.8 | 41 |
| 203 | Identification of dynamic mechanical parameters of the human chest during manual cardiopulmonary resuscitation. *IEEE Transactions on Biomedical Engineering*, **1990**, 37, 211-7 | 5 | 41 |
| 202 | Inhibition of lymphangiogenesis and angiogenesis in breast tumor xenografts and lymph nodes by a peptide derived from transmembrane protein 45A. *Neoplasia*, **2013**, 15, 112-24 | 6.4 | 40 |
| 201 | Multiscale imaging and computational modeling of blood flow in the tumor vasculature. *Annals of Biomedical Engineering*, **2012**, 40, 2425-41 | 4.7 | 40 |
| 200 | Relationship between erythrocyte aggregate size and flow rate in skeletal muscle venules. *American Journal of Physiology - Heart and Circulatory Physiology*, **2004**, 286, H113-20 | 5.2 | 40 |
| 199 | A Mathematical Model of Countercurrent Exchange of Oxygen Between Paired Arterioles and Venules. *Mathematical Biosciences*, **1988**, 91, 17-34 | 3.9 | 40 |
| 198 | Effect of erythrocyte aggregation at normal human levels on functional capillary density in rat spinotrapezius muscle. *American Journal of Physiology - Heart and Circulatory Physiology*, **2006**, 290, H941-7 | 5.2 | 39 |
| 197 | Lymphatic endothelial cells support tumor growth in breast cancer. *Scientific Reports*, **2014**, 4, 5853 | 4.9 | 37 |
| 196 | Pentastatin-1, a collagen IV derived 20-mer peptide, suppresses tumor growth in a small cell lung cancer xenograft model. *BMC Cancer*, **2010**, 10, 29 | 4.8 | 37 |
| 195 | Multi-scale computational models of pro-angiogenic treatments in peripheral arterial disease. *Annals of Biomedical Engineering*, **2007**, 35, 982-94 | 4.7 | 37 |
| 194 | Analysis of vascular pattern and dimensions in arteriolar networks of the retractor muscle in young hamsters. *Microvascular Research*, **1987**, 34, 168-83 | 3.7 | 37 |
| 193 | Effect of dispersion of vessel diameters and lengths in stochastic networks. I. Modeling of microcirculatory flow. *Microvascular Research*, **1986**, 31, 203-22 | 3.7 | 37 |
| 192 | Computational systems biology approaches to anti-angiogenic cancer therapeutics. *Drug Discovery Today*, **2015**, 20, 187-97 | 8.8 | 36 |
| 191 | Multiscale Modeling in the Clinic: Drug Design and Development. *Annals of Biomedical Engineering*, **2016**, 44, 2591-610 | 4.7 | 36 |
| 190 | A model of nitric oxide capillary exchange. *Microcirculation*, **2003**, 10, 479-95 | 2.9 | 36 |
| 189 | Monte Carlo simulations of VEGF binding to cell surface receptors in vitro. *Biochimica Et Biophysica Acta - Molecular Cell Research*, **2005**, 1746, 95-107 | 4.9 | 35 |

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| 188 | A QSP Model for Predicting Clinical Responses to Monotherapy, Combination and Sequential Therapy Following CTLA-4, PD-1, and PD-L1 Checkpoint Blockade. *Scientific Reports*, **2019**, 9, 11286 | 4.9 | 34 |
| 187 | Compartment model predicts VEGF secretion and investigates the effects of VEGF trap in tumor-bearing mice. *Frontiers in Oncology*, **2013**, 3, 196 | 5.3 | 34 |
| 186 | Effect of nonaxisymmetric hematocrit distribution on non-Newtonian blood flow in small tubes. *Biorheology*, **1998**, 35, 69-87 | 1.7 | 34 |
| 185 | VEGF and soluble VEGF receptor-1 (sFlt-1) distributions in peripheral arterial disease: an in silico model. *American Journal of Physiology - Heart and Circulatory Physiology*, **2010**, 298, H2174-91 | 5.2 | 33 |
| 184 | Estimation of elastic moduli and bending stiffness of the anisotropic outer hair cell wall. *Journal of the Acoustical Society of America*, **1998**, 103, 1007-11 | 2.2 | 33 |
| 183 | Intracoronary administration of FGF-2: a computational model of myocardial deposition and retention. *American Journal of Physiology - Heart and Circulatory Physiology*, **2005**, 288, H263-79 | 5.2 | 32 |
| 182 | Inhibition of breast cancer growth and metastasis by a biomimetic peptide. *Scientific Reports*, **2014**, 4, 7139 | 4.9 | 31 |
| 181 | Analysis of gene expression of secreted factors associated with breast cancer metastases in breast cancer subtypes. *Scientific Reports*, **2015**, 5, 12133 | 4.9 | 30 |
| 180 | Modeling triple-negative breast cancer heterogeneity: Effects of stromal macrophages, fibroblasts and tumor vasculature. *Journal of Theoretical Biology*, **2018**, 452, 56-68 | 2.3 | 30 |
| 179 | Computational model of VEGFR2 pathway to ERK activation and modulation through receptor trafficking. *Cellular Signalling*, **2013**, 25, 2496-510 | 4.9 | 30 |
| 178 | Tyrosine kinase blocking collagen IV-derived peptide suppresses ocular neovascularization and vascular leakage. *Science Translational Medicine*, **2017**, 9, | 17.5 | 29 |
| 177 | A two-compartment model of VEGF distribution in the mouse. *PLoS ONE*, **2011**, 6, e27514 | 3.7 | 29 |
| 176 | An experimental and theoretical study on the dissolution of mural fibrin clots by tissue-type plasminogen activator. *Biotechnology and Bioengineering*, **2002**, 77, 405-419 | 4.9 | 28 |
| 175 | Effect of Heterogeneous Oxygen Delivery on the Oxygen Distribution in Skeletal Muscle. *Mathematical Biosciences*, **1986**, 81, 91-113 | 3.9 | 28 |
| 174 | Trans-scleral delivery of antiangiogenic proteins. *Journal of Ocular Pharmacology and Therapeutics*, **2008**, 24, 70-9 | 2.6 | 27 |
| 173 | A compartmental model for oxygen transport in brain microcirculation in the presence of blood substitutes. *Journal of Theoretical Biology*, **2002**, 216, 479-500 | 2.3 | 27 |
| 172 | Potential distribution for a spheroidal cell having a conductive membrane in an electric field. *IEEE Transactions on Biomedical Engineering*, **1996**, 43, 970-2 | 5 | 27 |
| 171 | Analysis of Capillary-Tissue Diffusion in Multicapillary Systems. *Mathematical Biosciences*, **1978**, 39, 187-211 | 3.9 | 27 |

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| 170 | Crosstalk between stromal components and tumor cells of TNBC via secreted factors enhances tumor growth and metastasis. *Oncotarget*, **2017**, 8, 60210-60222 | 3.3 | 27 |
| 169 | simulation of a clinical trial with anti-CTLA-4 and anti-PD-L1 immunotherapies in metastatic breast cancer using a systems pharmacology model. *Royal Society Open Science*, **2019**, 6, 190366 | 3.3 | 26 |
| 168 | An agent-based model of triple-negative breast cancer: the interplay between chemokine receptor CCR5 expression, cancer stem cells, and hypoxia. *BMC Systems Biology*, **2017**, 11, 68 | 3.5 | 26 |
| 167 | Nitric oxide production pathways in erythrocytes and plasma. *Biorheology*, **2009**, 46, 107-19 | 1.7 | 26 |
| 166 | Three autocrine feedback loops determine HIF1 alpha expression in chronic hypoxia. *Biochimica Et Biophysica Acta - Molecular Cell Research*, **2007**, 1773, 1511-25 | 4.9 | 26 |
| 165 | Venular endothelium-derived NO can affect paired arteriole: a computational model. *American Journal of Physiology - Heart and Circulatory Physiology*, **2006**, 290, H716-23 | 5.2 | 26 |
| 164 | Effects of chlorpromazine on mechanical properties of the outer hair cell plasma membrane. *Biophysical Journal*, **2005**, 89, 4090-5 | 2.9 | 26 |
| 163 | Effect of dispersion of vessel diameters and lengths in stochastic networks. II. Modeling of microvascular hematocrit distribution. *Microvascular Research*, **1986**, 31, 223-34 | 3.7 | 26 |
| 162 | Effects of fiber type and size on the heterogeneity of oxygen distribution in exercising skeletal muscle. *PLoS ONE*, **2012**, 7, e44375 | 3.7 | 26 |
| 161 | Computational Model of Gab1/2-Dependent VEGFR2 Pathway to Akt Activation. *PLoS ONE*, **2013**, 8, e67438 | 3.7 | 26 |
| 160 | A Computational Model of Neoadjuvant PD-1 Inhibition in Non-Small Cell Lung Cancer. *AAPS Journal*, **2019**, 21, 79 | 3.7 | 25 |
| 159 | Computational Model of MicroRNA Control of HIF-VEGF Pathway: Insights into the Pathophysiology of Ischemic Vascular Disease and Cancer. *PLoS Computational Biology*, **2015**, 11, e1004612 | 5 | 25 |
| 158 | Pre-treatment of mice with tumor-conditioned media accelerates metastasis to lymph nodes and lungs: a new spontaneous breast cancer metastasis model. *Clinical and Experimental Metastasis*, **2014**, 31, 67-79 | 4.7 | 25 |
| 157 | Constructing the angiome: a global angiogenesis protein interaction network. *Physiological Genomics*, **2012**, 44, 915-24 | 3.6 | 25 |
| 156 | The ratio of elastic moduli of cochlear outer hair cells derived from osmotic experiments. *Journal of the Acoustical Society of America*, **1996**, 99, 1025-8 | 2.2 | 25 |
| 155 | Stratified multiphase model for blood flow in a venular bifurcation. *Annals of Biomedical Engineering*, **1997**, 25, 135-53 | 4.7 | 24 |
| 154 | Application of Chimera grid to modelling cell motion and aggregation in a narrow tube. *International Journal for Numerical Methods in Fluids*, **2007**, 53, 105-128 | 1.9 | 24 |
| 153 | Vascular smooth muscle NO exposure from intraerythrocytic SNOHb: a mathematical model. *Antioxidants and Redox Signaling*, **2007**, 9, 1097-110 | 8.4 | 24 |

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| 152 | Theoretical analysis of effects of blood substitute affinity and cooperativity on organ oxygen transport. *Journal of Applied Physiology*, **2002**, 93, 2122-8 | 3.7 | 24 |
| 151 | Anti-angiogenic peptides identified in thrombospondin type I domains. *Biochemical and Biophysical Research Communications*, **2007**, 359, 63-9 | 3.4 | 23 |
| 150 | A collagen IV-derived peptide disrupts α1β1 integrin and potentiates Ang2/Tie2 signaling. *JCI Insight*, **2019**, 4, | 9.9 | 23 |
| 149 | Human expression patterns: qualitative and quantitative analysis of thrombospondin-1 under physiological and pathological conditions. *Journal of Cellular and Molecular Medicine*, **2018**, 22, 2086-2097 | 5.6 | 22 |
| 148 | An agent-based model of cancer stem cell initiated avascular tumour growth and metastasis: the effect of seeding frequency and location. *Journal of the Royal Society Interface*, **2014**, 11, 20140640 | 4.1 | 22 |
| 147 | Angiogenesis-associated crosstalk between collagens, CXC chemokines, and thrombospondin domain-containing proteins. *Annals of Biomedical Engineering*, **2011**, 39, 2213-22 | 4.7 | 22 |
| 146 | Vascular and perivascular nitric oxide release and transport: biochemical pathways of neuronal nitric oxide synthase (NOS1) and endothelial nitric oxide synthase (NOS3). *Free Radical Biology and Medicine*, **2007**, 42, 811-22 | 7.8 | 22 |
| 145 | Erythrocyte margination and sedimentation in skeletal muscle venules. *American Journal of Physiology - Heart and Circulatory Physiology*, **2001**, 281, H951-8 | 5.2 | 22 |
| 144 | Gene therapy from the perspective of systems biology. *Current Opinion in Molecular Therapeutics*, **2010**, 12, 570-7 | | 22 |
| 143 | Analysis of VEGF--a regulated gene expression in endothelial cells to identify genes linked to angiogenesis. *PLoS ONE*, **2011**, 6, e24887 | 3.7 | 21 |
| 142 | Protein transport to choroid and retina following periocular injection: theoretical and experimental study. *Annals of Biomedical Engineering*, **2007**, 35, 615-30 | 4.7 | 21 |
| 141 | Nonlinear active force generation by cochlear outer hair cell. *Journal of the Acoustical Society of America*, **1999**, 105, 2414-20 | 2.2 | 21 |
| 140 | Computer Simulation of TSP1 Inhibition of VEGF-Akt-eNOS: An Angiogenesis Triple Threat. *Frontiers in Physiology*, **2018**, 9, 644 | 4.6 | 20 |
| 139 | Peptides derived from type I thrombospondin repeat-containing proteins of the CCN family inhibit proliferation and migration of endothelial cells. *International Journal of Biochemistry and Cell Biology*, **2007**, 39, 2314-23 | 5.6 | 20 |
| 138 | Modeling the circulation with three-terminal electrical networks containing special nonlinear capacitors. *Annals of Biomedical Engineering*, **1992**, 20, 595-616 | 4.7 | 20 |
| 137 | A mechanistic integrative computational model of macrophage polarization: Implications in human pathophysiology. *PLoS Computational Biology*, **2019**, 15, e1007468 | 5 | 20 |
| 136 | Angiopoietin-Tie Signaling Pathway in Endothelial Cells: A Computational Model. *IScience*, **2019**, 20, 497-511 | 6.1 | 19 |
| 135 | Small peptides derived from somatotropin domain-containing proteins inhibit blood and lymphatic endothelial cell proliferation, migration, adhesion and tube formation. *International Journal of Biochemistry and Cell Biology*, **2011**, 43, 1812-21 | 5.6 | 19 |

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| 134 | Diameter changes in skeletal muscle venules during arterial pressure reduction. *American Journal of Physiology - Heart and Circulatory Physiology*, **2000**, 279, H47-57 | 5.2 | 19 |
| 133 | Motion of a Rigid Cylinder Between Parallel Plates in Stokes Flow: Part 1: Motion in A Quiescent Fluid and Sedimentation. *Computers and Fluids*, **1987**, 15, 391-404 | 2.8 | 19 |
| 132 | Modeling of oxygen diffusion from the blood vessels to intracellular organelles. *Advances in Experimental Medicine and Biology*, **2003**, 530, 485-95 | 3.6 | 19 |
| 131 | Serpin-derived peptides are antiangiogenic and suppress breast tumor xenograft growth. *Translational Oncology*, **2012**, 5, 92-7 | 4.9 | 18 |
| 130 | Computational models of VEGF-associated angiogenic processes in cancer. *Mathematical Medicine and Biology*, **2012**, 29, 85-94 | 1.3 | 18 |
| 129 | Analysis of the micropipet experiment with the anisotropic outer hair cell wall. *Journal of the Acoustical Society of America*, **1998**, 103, 1001-6 | 2.2 | 18 |
| 128 | Role of Microvessels in Oxygen Supply to Tissue. *Physiology*, **1994**, 9, 119-123 | 9.8 | 18 |
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