Daniel P Howsmon

List of Publications by Year
in descending order

72 papers	4,381 citations	116194 36 h-index	124990 64 g-index
72 all docs	72 docs citations	72 times ranked	3902 citing authors

#	Article	IF	Citations
1	Three-dimensional analysis of hydrogel-imbedded aortic valve interstitial cell shape and its relation to contractile behavior. Acta Biomaterialia, 2022, , .	4.1	9
2	Mathematical Modeling of Complement Pathway Dynamics for Target Validation and Selection of Drug Modalities for Complement Therapies. Frontiers in Pharmacology, 2022, 13, 855743.	1.6	4
3	On the role of predicted in vivo mitral valve interstitial cell deformation on its biosynthetic behavior. Biomechanics and Modeling in Mechanobiology, 2021, 20, 135-144.	1.4	11
4	On Valve Interstitial Cell Signaling: The Link Between Multiscale Mechanics and Mechanobiology. Cardiovascular Engineering and Technology, 2021, 12, 15-27.	0.7	7
5	Pre-surgical Prediction of Ischemic Mitral Regurgitation Recurrence Using In Vivo Mitral Valve Leaflet Strains. Annals of Biomedical Engineering, 2021, 49, 3711-3723.	1.3	17
6	Altered Responsiveness to TGFÎ² and BMP and Increased CD45+ Cell Presence in Mitral Valves Are Unique Features of Ischemic Mitral Regurgitation. Arteriosclerosis, Thrombosis, and Vascular Biology, 2021, 41, 2049-2062.	1.1	3
7	Adventures in Heart Valve Function A Personal Thank You to Dr. Ajit P. Yoganathan. Cardiovascular Engineering and Technology, 2021, 12, 651-653.	0.7	1
8	Biology and Biomechanics of the Heart Valve Extracellular Matrix. Journal of Cardiovascular Development and Disease, 2020, 7, 57.	0.8	34
9	Mitral valve leaflet response to ischaemic mitral regurgitation: from gene expression to tissue remodelling. Journal of the Royal Society Interface, 2020, 17, 20200098.	1.5	20
10	Quantifying heart valve interstitial cell contractile state using highly tunable poly(ethylene glycol) hydrogels. Acta Biomaterialia, 2019, 96, 354-367.	4.1	24
11	Interactions Between Structural Remodeling and Hypertrophy in the Right Ventricle in Response to Pulmonary Arterial Hypertension. Journal of Biomechanical Engineering, 2019, 141, .	0.6	26
12	On the Simulation of Mitral Valve Function in Health, Disease, and Treatment. Journal of Biomechanical Engineering, 2019, 141, .	0.6	45
13	Non-Destructive Reflectance Mapping of Collagen Fiber Alignment in Heart Valve Leaflets. Annals of Biomedical Engineering, 2019, 47, 1250-1264.	1.3	28
14	Real-Time Detection of Infusion Site Failures in a Closed-Loop Artificial Pancreas. Journal of Diabetes Science and Technology, 2018, 12, 599-607.	1.3	21
15	Differences in fecal microbial metabolites and microbiota of children with autism spectrum disorders. Anaerobe, 2018, 49, 121-131.	1.0	249
16	Perspectives on Sharing Models and Related Resources in Computational Biomechanics Research. Journal of Biomechanical Engineering, 2018, 140, .	0.6	16
17	Erythrocyte fatty acid profiles in children are not predictive of autism spectrum disorder status: a case control study. Biomarker Research, 2018, 6, 12.	2.8	9
18	A noninvasive method for the determination of <i>in vivo</i> mitral valve leaflet strains. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e3142.	1.0	37

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19	The Three-Dimensional Microenvironment of the Mitral Valve: Insights into the Effects of Physiological Loads. Cellular and Molecular Bioengineering, 2018, 11, 291-306.	1.0	20
20	Mechanobiology of the heart valve interstitial cell: Simulation, experiment, and discovery. , 2018, , 249-283.		10
21	Kinesin-2 heterodimerization alters entry into a processive run along the microtubule but not stepping within the run. Journal of Biological Chemistry, 2018, 293, 13389-13400.	1.6	6
22	Multivariate techniques enable a biochemical classification of children with autism spectrum disorder versus typicallyâ€developing peers: A comparison and validation study. Bioengineering and Translational Medicine, 2018, 3, 156-165.	3.9	37
23	On the Functional Role of Valve Interstitial Cell Stress Fibers: A Continuum Modeling Approach. Journal of Biomechanical Engineering, 2017, 139, .	0.6	18
24	A functionally graded material model for the transmural stress distribution of the aortic valve leaflet. Journal of Biomechanics, 2017, 54, 88-95.	0.9	47
25	On the in vivo function of the mitral heart valve leaflet: insights into tissueâ€“interstitial cell biomechanical coupling. Biomechanics and Modeling in Mechanobiology, 2017, 16, 1613-1632.	1.4	25
26	Application of Zone Model Predictive Control Artificial Pancreas During Extended Use of Infusion Set and Sensor: A Randomized Crossover-Controlled Home-Use Trial. Diabetes Care, 2017, 40, 1096-1102.	4.3	46
27	Mathematical modeling of the methionine cycle and transsulfuration pathway in individuals with autism spectrum disorder. Journal of Theoretical Biology, 2017, 416, 28-37.	0.8	19
28	Regulation of valve interstitial cell homeostasis by mechanical deformation: implications for heart valve disease and surgical repair. Journal of the Royal Society Interface, 2017, 14, 20170580.	1.5	38
29	Empirical modeling of T cell activation predicts interplay of host cytokines and bacterial indole. Biotechnology and Bioengineering, 2017, 114, 2660-2667.	1.7	13
30	Closed-Loop Control Without Meal Announcement in Type 1 Diabetes. Diabetes Technology and Therapeutics, 2017, 19, 527-532.	2.4	87
31	Ex Vivo Methods for Informing Computational Models of the Mitral Valve. Annals of Biomedical Engineering, 2017, 45, 496-507.	1.3	43
32	On the need for multiâ€scale geometric modelling of the mitral heart valve. Healthcare Technology Letters, 2017, 4, 150-150.	1.9	18
33	On the Use of Multivariate Methods for Analysis of Data from Biological Networks. Processes, 2017, 5, 36.	1.3	14
34	Continuous Glucose Monitoring Enables the Detection of Losses in Infusion Set Actuation (LISAs). Sensors, 2017, 17, 161.	2.1	21
35	Classification and adaptive behavior prediction of children with autism spectrum disorder based upon multivariate data analysis of markers of oxidative stress and DNA methylation. PLoS Computational Biology, 2017, 13, e1005385.	1.5	90
36	Significant Association of Urinary Toxic Metals and Autism-Related Symptomsâ€"A Nonlinear Statistical Analysis with Cross Validation. PLoS ONE, 2017, 12, e0169526.	1.1	30

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37	Algorithms for a Single Hormone Closed-Loop Artificial Pancreas: Challenges Pertinent to Chemical Process Operations and Control. Processes, 2016, 4, 39.	1.3	4
38	Mitral valve leaflet remodelling during pregnancy: insights into cell-mediated recovery of tissue homeostasis. Journal of the Royal Society Interface, 2016, 13, 20160709.	1.5	45
39	Heart Valve Biomechanics and Underlying Mechanobiology. , 2016, 6, 1743-1780.		68
40	In-vivo heterogeneous functional and residual strains in human aortic valve leaflets. Journal of Biomechanics, 2016, 49, 2481-2490.	0.9	32
41	A meso-scale layer-specific structural constitutive model of the mitral heart valve leaflets. Acta Biomaterialia, 2016, 32, 238-255.	4.1	64
42	A Comprehensive Framework for the Characterization of the Complete Mitral Valve Geometry for the Development of a Population-Averaged Model. Lecture Notes in Computer Science, 2015, , 164-171.	1.0	15
43	Quantification and simulation of layer-specific mitral valve interstitial cells deformation under physiological loading. Journal of Theoretical Biology, 2015, 373, 26-39.	0.8	50
44	Hypo- and Hyperglycemic Alarms. Journal of Diabetes Science and Technology, 2015, 9, 1126-1137.	1.3	25
45	On the effects of leaflet microstructure and constitutive model on the closing behavior of the mitral valve. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1281-1302.	1.4	60
46	Pregnancy-Induced Remodeling of Collagen Architecture and Content in the Mitral Valve. Annals of Biomedical Engineering, 2014, 42, 2058-2071.	1.3	40
47	Osteopontinâ€“CD44v6 Interaction Mediates Calcium Deposition via Phospho-Akt in Valve Interstitial Cells From Patients With Noncalcified Aortic Valve Sclerosis. Arteriosclerosis, Thrombosis, and Vascular Biology, 2014, 34, 2086-2094.	1.1	47
48	Interlayer micromechanics of the aortic heart valve leaflet. Biomechanics and Modeling in Mechanobiology, 2014, 13, 813-826.	1.4	49
49	Noggin attenuates the osteogenic activation of human valve interstitial cells in aortic valve sclerosis. Cardiovascular Research, 2013, 98, 402-410.	1.8	44
50	A High-Fidelity and Micro-anatomically Accurate 3D Finite Element Model for Simulations of Functional Mitral Valve. Lecture Notes in Computer Science, 2013, 7945, 416-424.	1.0	23
51	On the In Vivo Deformation of the Mitral Valve Anterior Leaflet: Effects of Annular Geometry and Referential Configuration. Annals of Biomedical Engineering, 2012, 40, 1455-1467.	1.3	89
52	Effect of Geometry on the Leaflet Stresses in Simulated Models of Congenital Bicuspid Aortic Valves. Cardiovascular Engineering and Technology, 2011, 2, 48-56.	0.7	67
53	Mechanics of the Mitral Valve Strut Chordae Insertion Region. Journal of Biomechanical Engineering, 2010, 132, 081004.	0.6	42
54	In Vivo Dynamic Deformation of the Mitral Valve Annulus. Annals of Biomedical Engineering, 2009, 37, 1757-1771.	1.3	49

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55	On the biomechanics of heart valve function. Journal of Biomechanics, 2009, 42, 1804-1824.	0.9	306
56	Saddle Shape of the Mitral Annulus Reduces Systolic Strains on the P2 Segment of the Posterior Mitral Leaflet. Annals of Thoracic Surgery, 2009, 88, 1499-1504.	0.7	88
57	A Novel Flex-Stretch-Flow Bioreactor for the Study of Engineered Heart Valve Tissue Mechanobiology. Annals of Biomedical Engineering, 2008, 36, 700-712.	1.3	72
58	Heart valve function: a biomechanical perspective. Philosophical Transactions of the Royal Society B: Biological Sciences, 2008, 363, 2481-2481.	1.8	14
59	The Relation Between Collagen Fibril Kinematics and Mechanical Properties in the Mitral Valve Anterior Leaflet. Journal of Biomechanical Engineering, 2007, 129, 78-87.	0.6	108
60	Synergistic effects of cyclic tension and transforming growth factor-Î²1 on the aortic valve myofibroblast. Cardiovascular Pathology, 2007, 16, 268-276.	0.7	152
61	Heart valve function: a biomechanical perspective. Philosophical Transactions of the Royal Society B: Biological Sciences, 2007, 362, 1369-1391.	1.8	309
62	In-Situ Deformation of the Aortic Valve Interstitial Cell Nucleus Under Diastolic Loading. Journal of Biomechanical Engineering, 2007, 129, 880-889.	0.6	80
63	In-Vivo Dynamic Deformation of the Mitral Valve Anterior Leaflet. Annals of Thoracic Surgery, 2006, 82, 1369-1377.	0.7	122
64	The effects of cellular contraction on aortic valve leaflet flexural stiffness. Journal of Biomechanics, 2006, 39, 88-96.	0.9	110
65	Biaixal Stressâ€"Stretch Behavior of the Mitral Valve Anterior Leaflet at Physiologic Strain Rates. Annals of Biomedical Engineering, 2006, 34, 315-325.	1.3	159
66	Planar Biaxial Creep and Stress Relaxation of the Mitral Valve Anterior Leaflet. Annals of Biomedical Engineering, 2006, 34, 1509-1518.	1.3	94
67	The material properties of the native porcine mitral valve chordae tendineae: An in vitro investigation. Journal of Biomechanics, 2006, 39, 1129-1135.	0.9	63
68	Correlation between heart valve interstitial cell stiffness and transvalvular pressure: implications for collagen biosynthesis. American Journal of Physiology - Heart and Circulatory Physiology, 2006, 290, H224-H231.	1.5	183
69	In Vitro Dynamic Strain Behavior of the Mitral Valve Posterior Leaflet. Journal of Biomechanical Engineering, 2005, 127, 504-511.	0.6	73
70	Effects of Boundary Conditions on the Estimation of the Planar Biaxial Mechanical Properties of Soft Tissues. Journal of Biomechanical Engineering, 2005, 127, 709-715.	0.6	132
71	Effects of papillary muscle position on in-vitro dynamic strain on the porcine mitral valve. Journal of Heart Valve Disease, 2003, 12, 488-94.	0.5	42
72	Biaxial Mechanical Properties of the Native and Glutaraldehyde-Treated Aortic Valve Cusp: Part IIâ€"A Structural Constitutive Model. Journal of Biomechanical Engineering, 2000, 122, 327-335.	0.6	318