Graham M Donovan

List of Publications by Year
in descending order

53 papers	804 citations	623574 14 h-index	580701 25 g-index
53 all docs	53 docs citations	53 times ranked	852 citing authors

#	Article	IF	Citations
1	A multiscale, spatially distributed model of asthmatic airway hyper-responsiveness. Journal of Theoretical Biology, 2010, 266, 614-624.	0.8	70
2	Fatty airways: implications for obstructive disease. European Respiratory Journal, 2019, 54, 1900857.	3.1	63
3	A Deterministic Model Predicts the Properties of Stochastic Calcium Oscillations in Airway Smooth Muscle Cells. PLoS Computational Biology, 2014, 10, e1003783.	1.5	54
4	Unraveling a Clinical Paradox: Why Does Bronchial Thermoplasty Work in Asthma?. American Journal of Respiratory Cell and Molecular Biology, 2018, 59, 355-362.	1.4	54
5	A Stochastic Model of Calcium Puffs Based on Single-Channel Data. Biophysical Journal, 2013, 105, 1133-1142.	0.2	52
6	A Multi-Scale Approach to Airway Hyperresponsiveness: From Molecule to Organ. Frontiers in Physiology, 2012, 3, 191.	1.3	39
7	Force maintenance and myosin filament assembly regulated by Rho-kinase in airway smooth muscle. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2015, 308, L1-L10.	1.3	39
8	Dynamics and statistics of noise-like pulses in modelocked lasers. Physica D: Nonlinear Phenomena, 2015, 309, 1-8.	1.3	30
9	Heterogeneity of airway wall dimensions in humans: a critical determinant of lung function in asthmatics and nonasthmatics. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2017, 312, L425-L431.	1.3	29
10	Could an increase in airway smooth muscle shortening velocity cause airway hyperresponsiveness?. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2011, 300, L121-L131.	1.3	28
11	A Continuous-Binding Cross-Linker Model for Passive Airway Smooth Muscle. Biophysical Journal, 2010, 99, 3164-3171.	0.2	22
12	Patient-specific targeted bronchial thermoplasty: predictions of improved outcomes with structure-guided treatment. Journal of Applied Physiology, 2019, 126, 599-606.	1.2	22
13	Inter-airway structural heterogeneity interacts with dynamic heterogeneity to determine lung function and flow patterns in both asthmatic and control simulated lungs. Journal of Theoretical Biology, 2017, 435, 98-105.	0.8	21
14	T-cell movement on the reticular network. Journal of Theoretical Biology, 2012, 295, 59-67.	0.8	18
15	Clustered ventilation defects and bilinear respiratory reactance in asthma. Journal of Theoretical Biology, 2016, 406, 166-175.	0.8	16
16	Modelling airway smooth muscle passive length adaptation via thick filament length distributions. Journal of Theoretical Biology, 2013, 333, 102-108.	0.8	14
17	Spatial pattern formation in the lung. Journal of Mathematical Biology, 2015, 70, 1119-1149.	0.8	14
18	T cell and reticular network co-dependence in HIV infection. Journal of Theoretical Biology, 2016, 395, 211-220.	0.8	14

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19	Increased heterogeneity of airway calibre in adult rats after hypoxiaâ€induced intrauterine growth restriction. Respirology, 2017, 22, 1329-1335.	1.3	14
20	Pharmacological ablation of the airway smooth muscle layerâ€"Mathematical predictions of functional improvement in asthma. Physiological Reports, 2020, 8, e14451.	0.7	13
21	Asthma: Pharmacological degradation of the airway smooth muscle layer. International Journal of Biochemistry and Cell Biology, 2020, 126, 105818.	1.2	12
22	Quantifying parenchymal tethering in a finite element simulation of a human lung slice under bronchoconstriction. Respiratory Physiology and Neurobiology, 2012, 183, 85-90.	0.7	10
23	Bronchoprotective effect of simulated deep inspirations in tracheal smooth muscle. Journal of Applied Physiology, 2014, 117, 1502-1513.	1.2	10
24	Airway remodelling with spatial correlations: Implications for asthma pathogenesis. Respiratory Physiology and Neurobiology, 2020, 279, 103469.	0.7	10
25	Mechanical Abnormalities of the Airway Wall in Adult Mice After Intrauterine Growth Restriction. Frontiers in Physiology, 2019, 10, 1073.	1.3	9
26	Phenotype- and patient-specific modelling in asthma: Bronchial thermoplasty and uncertainty quantification. Journal of Theoretical Biology, 2020, 501, 110337.	0.8	9
27	Multiscale mathematical models of airway constriction and disease. Pulmonary Pharmacology and Therapeutics, 2011, 24, 533-539.	1.1	8
28	An Iterative Stochastic Method for Simulating Large Deviations and Rare Events. SIAM Journal on Applied Mathematics, 2011, 71, 903-924.	0.8	8
29	A Distribution-Moment Approximation for Coupled Dynamics of the Airway Wall and Airway Smooth Muscle. Biophysical Journal, 2018, 114, 493-501.	0.2	8
30	Biological version of Braess' paradox arising from perturbed homeostasis. Physical Review E, 2018, 98, .	0.8	8
31	Understanding the mechanism of bronchial thermoplasty using airway volume assessed by computed tomography. ERJ Open Research, 2019, 5, 00272-2019.	1.1	8
32	Reply to: Comment on â€œUnraveling a Clinical Paradox: Why Does Bronchial Thermoplasty Work in Asthma?â€ American Journal of Respiratory Cell and Molecular Biology, 2019, 61, 661-663.	1.4	8
33	Small airways vs large airways in asthma: time for a new perspective. Journal of Applied Physiology, 2021, 131, 1839-1841.	1.2	8
34	The Importance of Synergy between Deep Inspirations and Fluidization in Reversing Airway Closure. PLoS ONE, 2012, 7, e48552.	1.1	7
35	Airway Bistability Is Modulated by Smooth Muscle Dynamics and Length-Tension Characteristics. Biophysical Journal, 2016, 111, 2327-2335.	0.2	6
36	Growth of the airway smooth muscle layer from late gestation to childhood is mediated initially by hypertrophy and subsequently hyperplasia. Respirology, 2022, 27, 493-500.	1.3	6

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37	A simplified model of airway narrowing due to bronchial mucosal folding. Respiratory Physiology and Neurobiology, 2010, 171, 144-150.	0.7	5
38	Systemsâ€level airway models of bronchoconstriction. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2016, 8, 459-467.	6.6	5
39	Airway compliance and dynamics explain the apparent discrepancy in length adaptation between intact airways and smooth muscle strips. Respiratory Physiology and Neurobiology, 2016, 220, 25-32.	0.7	5
40	Response of individual airways in vivo to bronchial thermoplasty. Journal of Applied Physiology, 2021, 130, 1205-1213.	1.2	5
41	Requirements and limitations of imaging airway smooth muscle throughout the lung in vivo. Respiratory Physiology and Neurobiology, 2022, 301, 103884.	0.7	5
42	The effect of bronchial thermoplasty on airway volume measured 12â€...months post-procedure. ERJ Open Research, 2020, 6, 00300-2020.	1.1	4
43	Numerical discovery and continuation of points of infinitesimal homeostasis. Mathematical Biosciences, 2019, 311, 62-67.	0.9	3
44	Phenotype, endotype and patient-specific computational modelling for optimal treatment design in asthma. Drug Discovery Today: Disease Models, 2015, 15, 23-27.	1.2	2
45	Generalized distribution-moment approximation for kinetic theories of muscular contraction. Mathematical Biosciences, 2020, 329, 108455.	0.9	2
46	Mathematical modelling of lung function â€" what have we learnt and where to next?. Current Opinion in Physiology, 2021, 21, 17-22.	0.9	2
47	Spatial early warning signals for tipping points using dynamic mode decomposition. Physica A: Statistical Mechanics and Its Applications, 2022, 596, 127152.	1.2	2
48	Dynamics and statistics of noise-like pulses and Rogue Waves. , 2014, , .		1
49	An in silico study examining the role of airway smooth muscle dynamics and airway compliance on the rate of airway re-narrowing after deep inspiration. Respiratory Physiology and Neurobiology, 2020, 271, 103257.	0.7	1
50	Last Word on Viewpoint: Small airways vs. large airways in asthma: time for a new perspectiveâ€"Size does not matter: airway interactions determine respiratory dys(function). Journal of Applied Physiology, 2021, 131, 1849-1849.	1.2	1
51	Rare event simulation of the performance of an actively mode-locked fiber laser model. , 2007, , .		0
52	Deep Inspirations And Bronchial Challenge In A Predictive Multiscale Model Of The Human Lung. , 2011, , .		0
53	Slip Rates and Slip Modes in an Actively Mode-Locked Laser. SIAM Journal on Applied Dynamical Systems, 2020, 19, 1472-1495.	0.7	0