Roeland M H Merks

List of Publications by Year
in descending order

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Version: 2024-02-01

71 papers	3,398 citations	172457 29 h-index	155660 55 g-index
92 all docs	92 docs citations	92 times ranked	4049 citing authors

#	ARTICLE	IF	CITATIONS
1	Modeling Plant Tissue Development Using VirtualLeaf. Methods in Molecular Biology, 2022, 2395, 165-198.	0.9	3
2	Computational modelling of cell motility modes emerging from cell-matrix adhesion dynamics. PLoS Computational Biology, 2022, 18, e1009156.	3.2	9
3	Implementing Computational Modeling in Tissue Engineering: Where Disciplines Meet. Tissue Engineering - Part A, 2022, 28, 542-554.	3.1	11
4	A Novel Function of TLR2 and MyD88 in the Regulation of Leukocyte Cell Migration Behavior During Wounding in Zebrafish Larvae. Frontiers in Cell and Developmental Biology, 2021, 9, 624571.	3.7	9
5	Twisting of the zebrafish heart tube during cardiac looping is a tbx5-dependent and tissue-intrinsic process. ELife, 2021, 10, .	6.0	10
6	Chiral stresses in nematic cell monolayers. Soft Matter, 2020, 16, 764-774.	2.7	15
7	Cell Shape and Durotaxis Explained from Cell-Extracellular Matrix Forces and Focal Adhesion Dynamics. IScience, 2020, 23, 101488.	4.1	60
8	Mechanical interplay between cell shape and actin cytoskeleton organization. Soft Matter, 2020, 16, 6328-6343.	2.7	30
9	Autocrine inhibition of cell motility can drive epithelial branching morphogenesis in the absence of growth. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190386.	4.0	3
10	Somite Division and New Boundary Formation by Mechanical Strain. IScience, 2020, 23, 100976.	4.1	15
11	Topotaxis of active Brownian particles. Physical Review E, 2020, 101, 032602.	2.1	23
12	Evolution of multicellularity by collective integration of spatial information. ELife, 2020, 9, .	6.0	15
13	Predicting Metabolism from Gene Expression in an Improved Whole-Genome Metabolic Network Model of<i>Danio rerio</i>. Zebrafish, 2019, 16, 348-362.	1.1	20
14	Adapting a Plant Tissue Model to Animal Development: Introducing Cell Sliding into VirtualLeaf. Bulletin of Mathematical Biology, 2019, 81, 3322-3341.	1.9	7
15	Cellular Potts Model: Applications to Vasculogenesis and Angiogenesis. Emergence, Complexity and Computation, 2018, , 279-310.	0.3	9
16	Cytoskeletal Anisotropy Controls Geometry and Forces of Adherent Cells. Physical Review Letters, 2018, 121, 178101.	7.8	17
17	A local uPAR-plasmin-TGFÎ²1 positive feedback loop in a qualitative computational model of angiogenic sprouting explains the in vitro effect of fibrinogen variants. PLoS Computational Biology, 2018, 14, e1006239.	3.2	3
18	Cell Contractility Facilitates Alignment of Cells and Tissues to Static Uniaxial Stretch. Biophysical Journal, 2017, 112, 755-766.	0.5	36

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19	Cellular Potts modeling of complex multicellular behaviors in tissue morphogenesis. Development Growth and Differentiation, 2017, 59, 329-339.	1.5	80
20	Shaping the cell fate. Cell Cycle, 2017, 16, 149-150.	2.6	2
21	Emergence of microbial diversity due to cross-feeding interactions in a spatial model of gut microbial metabolism. BMC Systems Biology, 2017, 11, 56.	3.0	83
22	Blood vessel tortuosity selects against evolution of aggressive tumor cells in confined tissue environments: A modeling approach. PLoS Computational Biology, 2017, 13, e1005635.	3.2	13
23	Memory of cell shape biases stochastic fate decision-making despite mitotic rounding. Nature Communications, 2016, 7, 11963.	12.8	36
24	Glycolytic regulation of cell rearrangement in angiogenesis. Nature Communications, 2016, 7, 12240.	12.8	131
25	Computational Screening of Tip and Stalk Cell Behavior Proposes a Role for Apelin Signaling in Sprout Progression. PLoS ONE, 2016, 11, e0159478.	2.5	27
26	Cell-based modeling of cell-matrix interactions in angiogenesis. ITM Web of Conferences, 2015, 5, 00015.	0.5	1
27	Particle-based simulation of ellipse-shaped particle aggregation as a model for vascular network formation. Computational Particle Mechanics, 2015, 2, 371-379.	3.0	11
28	Cell-Based Modeling. , 2015, , 195-201.		4
29	A global sensitivity analysis approach for morphogenesis models. BMC Systems Biology, 2015, 9, 85.	3.0	12
30	Tip cell overtaking occurs as a side effect of sprouting in computational models of angiogenesis. BMC Systems Biology, 2015, 9, 86.	3.0	47
31	Nodal Signaling Range Is Regulated by Proprotein Convertase-Mediated Maturation. Developmental Cell, 2015, 32, 631-639.	7.0	17
32	An <i>in silico</i> study on the role of smooth muscle cell migration in neointimal formation after coronary stenting. Journal of the Royal Society Interface, 2015, 12, 20150358.	3.4	38
33	Large-Scale Parameter Studies of Cell-Based Models of Tissue Morphogenesis Using CompuCell3D or VirtualLeaf. Methods in Molecular Biology, 2015, 1189, 301-322.	0.9	13
34	Cell-Based Computational Modeling of Vascular Morphogenesis Using Tissue Simulation Toolkit. Methods in Molecular Biology, 2015, 1214, 67-127.	0.9	21
35	Mechanical Cell-Matrix Feedback Explains Pairwise and Collective Endothelial Cell Behavior In Vitro. PLoS Computational Biology, 2014, 10, e1003774.	3.2	160
36	Synergy of cellâ€"cell repulsion and vacuolation in a computational model of lumen formation. Journal of the Royal Society Interface, 2014, 11, 20131049.	3.4	23

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37	A Cell-Based Model of Extracellular-Matrix-Guided Endothelial Cell Migration During Angiogenesis. Bulletin of Mathematical Biology, 2013, 75, 1377-1399.	1.9	93
38	Hyaluronan: A critical regulator of endothelial-to-mesenchymal transition during cardiac valve formation. Trends in Cardiovascular Medicine, 2013, 23, 135-142.	4.9	30
39	Computational Modeling of Angiogenesis: Towards a Multi-Scale Understanding of Cellâ€"Cell and Cellâ€"Matrix Interactions. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2013, , 161-183.	1.0	9
40	Cellular Potts Modeling of Tumor Growth, Tumor Invasion, and Tumor Evolution. Frontiers in Oncology, 2013, 3, 87.	2.8	147
41	Vascular networks due to dynamically arrested crystalline ordering of elongated cells. Physical Review E, 2013, 87, 012725.	2.1	24
42	Building Simulation Models of Developing Plant Organs Using VirtualLeaf. Methods in Molecular Biology, 2013, 959, 333-352.	0.9	10
43	Integrating two patterning processes in the flower. Plant Signaling and Behavior, 2012, 7, 682-684.	2.4	0
44	Redox balance is key to explaining full vs. partial switching to low-yield metabolism. BMC Systems Biology, 2012, 6, 22.	3.0	97
45	Simulation of Organ Patterning on the Floral Meristem Using a Polar Auxin Transport Model. PLoS ONE, 2012, 7, e28762.	2.5	41
46	Quantitative analysis of venation patterns of Arabidopsis leaves by supervised image analysis. Plant Journal, 2012, 69, 553-563.	5.7	52
47	VirtualLeaf: An Open-Source Framework for Cell-Based Modeling of Plant Tissue Growth and Development Â Â Â. Plant Physiology, 2011, 155, 656-666.	4.8	132
48	SHORT-ROOT and SCARECROW Regulate Leaf Growth in Arabidopsis by Stimulating S-Phase Progression of the Cell Cycle. Plant Physiology, 2010, 154, 1183-1195.	4.8	98
49	Emergence of tissue polarization from synergy of intracellular and extracellular auxin signaling. Molecular Systems Biology, 2010, 6, 447.	7.2	126
50	Modeling Lignin Polymerization. I. Simulation Model of Dehydrogenation Polymers Â. Plant Physiology, 2010, 153, 1332-1344.	4.8	61
51	Modeling Morphogenesis<i>in silico</i>and<i>in vitro</i>: Towards Quantitative, Predictive, Cell-based Modeling. Mathematical Modelling of Natural Phenomena, 2009, 4, 149-171.	2.4	64
52	Individual cell-based models of cell scatter of ARO and MLP-29 cells in response to hepatocyte growth factor. Journal of Theoretical Biology, 2009, 260, 151-160.	1.7	19
53	Contact-Inhibited Chemotaxis in De Novo and Sprouting Blood-Vessel Growth. PLoS Computational Biology, 2008, 4, e1000163.	3.2	185
54	Canalization without flux sensors: a traveling-wave hypothesis. Trends in Plant Science, 2007, 12, 384-390.	8.8	98

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55	Glycated Collagen I (GC) impairs angiogenesis in vitroâ€"A study using an innovative chamber for cell research. Diabetes Research and Clinical Practice, 2007, 76, 463-467.	2.8	2
56	The Cellular Potts Model in Biomedicine. , 2007, , 137-150.		4
57	From Genes to Organisms Via the Cell: A Problem-Solving Environment for Multicellular Development. Computing in Science and Engineering, 2007, 9, 50-60.	1.2	61
58	The Glazier-Graner-Hogeweg Model: Extensions, Future Directions, and Opportunities for Further Study. , 2007, , 151-167.		28
59	Problem-solving environments for biological morphogenesis. Computing in Science and Engineering, 2006, 8, 61-72.	1.2	6
60	Cell elongation is key to in silico replication of in vitro vasculogenesis and subsequent remodeling. Developmental Biology, 2006, 289, 44-54.	2.0	213
61	Dynamic mechanisms of blood vessel growth. Nonlinearity, 2006, 19, C1-C10.	1.4	72
62	A cell-centered approach to developmental biology. Physica A: Statistical Mechanics and Its Applications, 2005, 352, 113-130.	2.6	201
63	Endothelial microparticles affect angiogenesis in vitro: role of oxidative stress. American Journal of Physiology - Heart and Circulatory Physiology, 2005, 289, H1106-H1114.	3.2	198
64	Morphogenesis of the branching reef coral Madracis mirabilis. Proceedings of the Royal Society B: Biological Sciences, 2005, 272, 127-133.	2.6	76
65	Polyp oriented modelling of coral growth. Journal of Theoretical Biology, 2004, 228, 559-576.	1.7	43
66	Cell-Oriented Modeling of In Vitro Capillary Development. Lecture Notes in Computer Science, 2004, , 425-434.	1.3	29
67	Models of coral growth: spontaneous branching, compactification and the Laplacian growth assumption. Journal of Theoretical Biology, 2003, 224, 153-166.	1.7	51
68	DIFFUSION-LIMITED AGGREGATION IN LAMINAR FLOWS. International Journal of Modern Physics C, 2003, 14, 1171-1182.	1.7	8
69	A Problem Solving Environment for Modelling Stony Coral Morphogenesis. Lecture Notes in Computer Science, 2003, , 639-648.	1.3	5
70	The Moment Propagation Method for Advectionâ€"Diffusion in the Lattice Boltzmann Method: Validation and PÃ©clet Number Limits. Journal of Computational Physics, 2002, 183, 563-576.	3.8	56
71	Spontaneous Branching in a Polyp Oriented Model of Stony Coral Growth. Lecture Notes in Computer Science, 2002, , 88-96.	1.3	2