Paul Macklin

List of Publications by Citations

61 papers	2,360 citations	21 h-index	48 g-index
76 ext. papers	3,119 ext. citations	7.7 avg, IF	5.82 L-index

#	Paper	IF	Citations
61	Multiscale cancer modeling. *Annual Review of Biomedical Engineering*, **2011**, 13, 127-55	12	279
60	Multiscale modelling and nonlinear simulation of vascular tumour growth. *Journal of Mathematical Biology*, **2009**, 58, 765-98	2	270
59	Computer simulation of glioma growth and morphology. *NeuroImage*, **2007**, 37 Suppl 1, S59-70	7.9	173
58	The human body at cellular resolution: the NIH Human Biomolecular Atlas Program. *Nature*, **2019**, 574, 187-192	50.4	162
57	Patient-calibrated agent-based modelling of ductal carcinoma in situ (DCIS): from microscopic measurements to macroscopic predictions of clinical progression. *Journal of Theoretical Biology*, **2012**, 301, 122-40	2.3	152
56	PhysiCell: An open source physics-based cell simulator for 3-D multicellular systems. *PLoS Computational Biology*, **2018**, 14, e1005991	5	149
55	Nonlinear simulation of the effect of microenvironment on tumor growth. *Journal of Theoretical Biology*, **2007**, 245, 677-704	2.3	147
54	A Review of Cell-Based Computational Modeling in Cancer Biology. *JCO Clinical Cancer Informatics*, **2019**, 3, 1-13	5.2	125
53	The Cancer Microbiome: Distinguishing Direct and Indirect Effects Requires a Systemic View. *Trends in Cancer*, **2020**, 6, 192-204	12.5	79
52	The 2019 mathematical oncology roadmap. *Physical Biology*, **2019**, 16, 041005	3	78
51	Evolving interfaces via gradients of geometry-dependent interior Poisson problems: application to tumor growth. *Journal of Computational Physics*, **2005**, 203, 191-220	4.1	72
50	A New Ghost Cell/Level Set Method for Moving Boundary Problems: Application to Tumor Growth. *Journal of Scientific Computing*, **2008**, 35, 266-299	2.3	59
49	An improved geometry-aware curvature discretization for level set methods: Application to tumor growth. *Journal of Computational Physics*, **2006**, 215, 392-401	4.1	55
48	BioFVM: an efficient, parallelized diffusive transport solver for 3-D biological simulations. *Bioinformatics*, **2016**, 32, 1256-8	7.2	50
47	PhysiBoSS: a multi-scale agent-based modelling framework integrating physical dimension and cell signalling. *Bioinformatics*, **2019**, 35, 1188-1196	7.2	44
46	A Novel, Patient-Specific Mathematical Pathology Approach for Assessment of Surgical Volume: Application to Ductal Carcinomain situof The Breast. *Analytical Cellular Pathology*, **2011**, 34, 247-263	3.4	38
45	A novel, patient-specific mathematical pathology approach for assessment of surgical volume: application to ductal carcinoma in situ of the breast. *Analytical Cellular Pathology*, **2011**, 34, 247-63	3.4	31

44	High-throughput cancer hypothesis testing with an integrated PhysiCell-EMEWS workflow. *BMC Bioinformatics*, **2018**, 19, 483	3.6	31
43	An agent-based model for elasto-plastic mechanical interactions between cells, basement membrane and extracellular matrix. *Mathematical Biosciences and Engineering*, **2013**, 10, 75-101	2.1	29
42	Learning-accelerated discovery of immune-tumour interactions. *Molecular Systems Design and Engineering*, **2019**, 4, 747-760	4.6	27
41	Integrative physical oncology. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2012**, 4, 1-14	6.6	25
40	Progress Towards Computational 3-D Multicellular Systems Biology. *Advances in Experimental Medicine and Biology*, **2016**, 936, 225-246	3.6	21
39	Agent-Based Modeling of Cancer Stem Cell Driven Solid Tumor Growth. *Methods in Molecular Biology*, **2016**, 1516, 335-346	1.4	21
38	Key challenges facing data-driven multicellular systems biology. *GigaScience*, **2019**, 8,	7.6	19
37	AN EVOLUTIONARY MODEL OF TUMOR CELL KINETICS AND THE EMERGENCE OF MOLECULAR HETEROGENEITY DRIVING GOMPERTZIAN GROWTH. *SIAM Review*, **2016**, 58, 716-736	7.4	18
36	Iterative community-driven development of a SARS-CoV-2 tissue simulator **2021**,		18
35	Correlating nuclear morphometric patterns with estrogen receptor status in breast cancer pathologic specimens. *Npj Breast Cancer*, **2018**, 4, 32	7.8	17
34	Maraviroc inhibits SARS-CoV-2 multiplication and s-protein mediated cell fusion in cell culture **2020**,		16
33	Improved patient-specific calibration for agent-based cancer modeling. *Journal of Theoretical Biology*, **2013**, 317, 422-4	2.3	15
32	Quantifying differences in cell line population dynamics using CellPD. *BMC Systems Biology*, **2016**, 10, 92	3.5	13
31	When Seeing Isn't Believing: How Math Can Guide Our Interpretation of Measurements and Experiments. *Cell Systems*, **2017**, 5, 92-94	10.6	13
30	xml2jupyter: Mapping parameters between XML and Jupyter widgets. *Journal of Open Source Software*, **2019**, 4,	5.2	11
29	Modeling Multiscale Necrotic and Calcified Tissue Biomechanics in Cancer Patients: Application to Ductal Carcinoma In Situ (DCIS). *Studies in Mechanobiology, Tissue Engineering and Biomaterials*, **2013**, 349-380	0.5	9
28	The Need for Integrative Computational Oncology: An Illustrated Example through MMP-Mediated Tissue Degradation. *Frontiers in Oncology*, **2013**, 3, 194	5.3	8
27	Digital twins for predictive oncology will be a paradigm shift for precision cancer care. *Nature Medicine*, **2021**,	50.5	8

26	MultiCellDS: a community-developed standard for curating microenvironment-dependent multicellular data		8
25	Foundations for Open Scholarship Strategy Development		7
24	MultiCellDS: a standard and a community for sharing multicellular data		7
23	Impact of tumor-parenchyma biomechanics on liver metastatic progression: a multi-model approach. *Scientific Reports*, **2021**, 11, 1710	4.9	7
22	Agent-Based Modeling of Ductal Carcinoma In Situ: Application to Patient-Specific Breast Cancer Modeling **2009**, 77-111		6
21	Envisioning the future of precision oncology trials.. *Nature Cancer*, **2021**, 2, 9-11	15.4	5
20	PhysiCell: an Open Source Physics-Based Cell Simulator for 3-D Multicellular Systems		4
19	A persistent invasive phenotype in post-hypoxic tumor cells is revealed by fate mapping and computational modeling. *IScience*, **2021**, 24, 102935	6.1	4
18	OrgDyn: feature- and model-based characterization of spatial and temporal organoid dynamics. *Bioinformatics*, **2020**, 36, 3292-3294	7.2	3
17	Agent-based simulation of large tumors in 3-D microenvironments		3
16	Nonlinear Modeling and Simulation of Tumor Growth **2008**, 1-69		3
15	High-throughput cancer hypothesis testing with an integrated PhysiCell-EMEWS workflow		2
14	Open source tools and standardized data in cancer systems biology		2
13	PhysiBoSS: a multi-scale agent based modelling framework integrating physical dimension and cell signalling		2
12	xml2jupyter: Mapping parameters between XML and Jupyter widgets		2
11	High-throughput microscopy reveals the impact of multifactorial environmental perturbations on colorectal cancer cell growth. *GigaScience*, **2021**, 10,	7.6	2
10	Quantification of cancer cell migration with an integrated experimental-computational pipeline. *F1000Research*,7, 1296	3.6	1
9	Quantification of cancer cell migration with an integrated experimental-computational pipeline		1

8	DAPT: A package enabling distributed automated parameter testing. *GigaByte*,2021, 1-10		1
7	StudentsTUse of Metacognitive Skills in Undergraduate Research Experiences in Computational Modeling **2019**,		1
6	A persistent invasive phenotype in post-hypoxic tumor cells is revealed by novel fate-mapping and computational modeling		1
5	Agent-based computational modelling of glioblastoma predicts that stromal density is central to oncolytic virus efficacy. *IScience*, **2022**, 104395	6.1	1
4	Elucidating tumor-stromal metabolic crosstalk in colorectal cancer through integration of constraint-based models and LC-MS metabolomics. *Metabolic Engineering*, **2021**, 69, 175-175	9.7	0
3	Forecasting cancer: from precision to predictive medicine.. *Med*, **2021**, 2, 1004-1010	31.7	0
2	LECTURE NOTES ON NONLINEAR TUMOR GROWTH: MODELING AND SIMULATION. *Lecture Notes Series, Institute for Mathematical Sciences*, **2009**, 69-133	0.1	
1	Supporting Through Educational and Software Infrastructure: A Case Study in a Mathematical Oncology Research Lab.. *Primus*, **2022**, 32, 446-467	0.3	