

Andre Levchenko

List of Publications by Year in descending order

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67
papers

6,721
citations

87888

38
h-index

102487

66
g-index

82
all docs

82
docs citations

82
times ranked

10136
citing authors

#	ARTICLE	IF	CITATIONS
1	Information Transduction Capacity of Noisy Biochemical Signaling Networks. <i>Science</i> , 2011, 334, 354-358.	12.6	1,007
2	Nanoscale cues regulate the structure and function of macroscopic cardiac tissue constructs. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 565-570.	7.1	541
3	Matrix nanotopography as a regulator of cell function. <i>Journal of Cell Biology</i> , 2012, 197, 351-360.	5.2	522
4	Mechanosensitivity of fibroblast cell shape and movement to anisotropic substratum topography gradients. <i>Biomaterials</i> , 2009, 30, 5433-5444.	11.4	323
5	MAPK-mediated bimodal gene expression and adaptive gradient sensing in yeast. <i>Nature</i> , 2007, 446, 46-51.	27.8	277
6	A microfluidic chemostat for experiments with bacterial and yeast cells. <i>Nature Methods</i> , 2005, 2, 685-689.	19.0	243
7	Systems Biology of Cancer Metastasis. <i>Cell Systems</i> , 2019, 9, 109-127.	6.2	233
8	Directed migration of cancer cells guided by the graded texture of the underlying matrix. <i>Nature Materials</i> , 2016, 15, 792-801.	27.5	190
9	Hypoxia-inducible factor-dependent breast cancer mesenchymal stem cell bidirectional signaling promotes metastasis. <i>Journal of Clinical Investigation</i> , 2013, 123, 189-205.	8.2	171
10	Intercellular transfer of P-glycoprotein mediates acquired multidrug resistance in tumor cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 1933-1938.	7.1	162
11	Single-cell connectomic analysis of adult mammalian lungs. <i>Science Advances</i> , 2019, 5, eaaw3851.	10.3	156
12	Hypoxia-inducible factor-dependent breast cancer mesenchymal stem cell bidirectional signaling promotes metastasis. <i>Journal of Clinical Investigation</i> , 2013, 123, 1402-1402.	8.2	137
13	Self-Organization in High-Density Bacterial Colonies: Efficient Crowd Control. <i>PLoS Biology</i> , 2007, 5, e302.	5.6	131
14	Cell-cell communication enhances the capacity of cell ensembles to sense shallow gradients during morphogenesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E679-88.	7.1	126
15	Spatial control of adult stem cell fate using nanotopographic cues. <i>Biomaterials</i> , 2014, 35, 2401-2410.	11.4	120
16	Brain-on-a-chip model enables analysis of human neuronal differentiation and chemotaxis. <i>Lab on A Chip</i> , 2016, 16, 4152-4162.	6.0	119
17	Chemically inducible diffusion trap at cilia reveals molecular sieve-like barrier. <i>Nature Chemical Biology</i> , 2013, 9, 437-443.	8.0	117
18	Cellular noise and information transmission. <i>Current Opinion in Biotechnology</i> , 2014, 28, 156-164.	6.6	115

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19	Switch-like enhancement of epithelial-mesenchymal transition by YAP through feedback regulation of WT1 and Rho-family GTPases. <i>Nature Communications</i> , 2019, 10, 2797.	12.8	105
20	Topotaxis: A New Mechanism of Directed Cell Migration in Topographic ECM Gradients. <i>Biophysical Journal</i> , 2018, 114, 1257-1263.	0.5	97
21	A Nontranscriptional Role for HIF-1 α as a Direct Inhibitor of DNA Replication. <i>Science Signaling</i> , 2013, 6, ra10.	3.6	95
22	The application of information theory to biochemical signaling systems. <i>Physical Biology</i> , 2012, 9, 045011.	1.8	91
23	Endothelial cells decode VEGF-mediated Ca ²⁺ signaling patterns to produce distinct functional responses. <i>Science Signaling</i> , 2016, 9, ra20.	3.6	85
24	A Cell-Based Model for Quorum Sensing in Heterogeneous Bacterial Colonies. <i>PLoS Computational Biology</i> , 2010, 6, e1000819.	3.2	82
25	Robust and sensitive control of a quorum sensing circuit by two interlocked feedback loops. <i>Molecular Systems Biology</i> , 2008, 4, 234.	7.2	81
26	Interplay between chemotaxis and contact inhibition of locomotion determines exploratory cell migration. <i>Nature Communications</i> , 2015, 6, 6619.	12.8	72
27	Limits to the precision of gradient sensing with spatial communication and temporal integration. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E689-95.	7.1	67
28	Migration Phenotype of Brain-Cancer Cells Predicts Patient Outcomes. <i>Cell Reports</i> , 2016, 15, 2616-2624.	6.4	63
29	Oscillatory Phosphorylation of Yeast Fus3 MAP Kinase Controls Periodic Gene Expression and Morphogenesis. <i>Current Biology</i> , 2008, 18, 1700-1706.	3.9	62
30	Synthetic spatially graded Rac activation drives cell polarization and movement. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, E3668-77.	7.1	60
31	Brachyury-YAP Regulatory Axis Drives Stemness and Growth in Cancer. <i>Cell Reports</i> , 2017, 21, 495-507.	6.4	59
32	Self-induced mechanical stress can trigger biofilm formation in uropathogenic <i>Escherichia coli</i> . <i>Nature Communications</i> , 2018, 9, 4087.	12.8	57
33	Single-cell dynamics and variability of MAPK activity in a yeast differentiation pathway. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E5896-E5905.	7.1	56
34	Two interferon-independent double-stranded RNA-induced host defense strategies suppress the common cold virus at warm temperature. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 8496-8501.	7.1	54
35	Evolution of placental invasion and cancer metastasis are causally linked. <i>Nature Ecology and Evolution</i> , 2019, 3, 1743-1753.	7.8	53
36	Mechanochemical feedback underlies coexistence of qualitatively distinct cell polarity patterns within diverse cell populations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E5750-E5759.	7.1	51

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37	Regulation of PTEN translation by PI3K signaling maintains pathway homeostasis. <i>Molecular Cell</i> , 2021, 81, 708-723.e5.	9.7	51
38	3S - Systematic, systemic, and systems biology and toxicology. <i>ALTEX: Alternatives To Animal Experimentation</i> , 2018, 35, 139-162.	1.5	50
39	Computation and visualization of cell signaling topologies in single-cell systems data using Connectome. <i>Scientific Reports</i> , 2022, 12, 4187.	3.3	50
40	Pericytes enable effective angiogenesis in the presence of proinflammatory signals. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 23551-23561.	7.1	49
41	A mathematical model coupling polarity signaling to cell adhesion explains diverse cell migration patterns. <i>PLoS Computational Biology</i> , 2017, 13, e1005524.	3.2	48
42	Scp160-Dependent mRNA Trafficking Mediates Pheromone Gradient Sensing and Chemotropism in Yeast. <i>Cell Reports</i> , 2012, 1, 483-494.	6.4	38
43	Notch signaling mediates melanoma endothelial cell communication and melanoma cell migration. <i>Pigment Cell and Melanoma Research</i> , 2013, 26, 697-707.	3.3	32
44	Signaling diversity enabled by Rap1-regulated plasma membrane ERK with distinct temporal dynamics. <i>ELife</i> , 2020, 9, .	6.0	32
45	Spatial Manipulation with Microfluidics. <i>Frontiers in Bioengineering and Biotechnology</i> , 2015, 3, 39.	4.1	31
46	Noise decomposition of intracellular biochemical signaling networks using nonequivalent reporters. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 17330-17335.	7.1	29
47	Quantitative Analysis of the Combined Effect of Substrate Rigidity and Topographic Guidance on Cell Morphology. <i>IEEE Transactions on Nanobioscience</i> , 2012, 11, 28-36.	3.3	28
48	Tracking cell motion using GM-PHD. , 2009, , .		27
49	A microphysiological model of the bronchial airways reveals the interplay of mechanical and biochemical signals in bronchospasm. <i>Nature Biomedical Engineering</i> , 2019, 3, 532-544.	22.5	25
50	Combined HMG-COA reductase and prenylation inhibition in treatment of CCM. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 5503-5508.	7.1	24
51	Dynamic secretome of bone marrow-derived stromal cells reveals a cardioprotective biochemical cocktail. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 14374-14383.	7.1	22
52	The Coevolution of Placentation and Cancer. <i>Annual Review of Animal Biosciences</i> , 2022, 10, 259-279.	7.4	20
53	Biomechanical interplay between anisotropic re-organization of cells and the surrounding matrix underlies transition to invasive cancer spread. <i>Scientific Reports</i> , 2018, 8, 14210.	3.3	19
54	Computation and measurement of cell decision making errors using single cell data. <i>PLoS Computational Biology</i> , 2017, 13, e1005436.	3.2	18

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55	Comments on Boddy et al. 2020: Available data suggest positive relationship between placental invasion and malignancy. <i>Evolution, Medicine and Public Health</i> , 2020, 2020, 211-214.	2.5	12
56	Models at the single cell level. <i>Wiley Interdisciplinary Reviews: Systems Biology and Medicine</i> , 2010, 2, 34-48.	6.6	11
57	Computational cell biology in the post-genomic era. <i>Molecular Biology Reports</i> , 2001, 28, 83-89.	2.3	10
58	Modeling Intercellular Transfer of Biomolecules Through Tunneling Nanotubes. <i>Bulletin of Mathematical Biology</i> , 2013, 75, 1400-1416.	1.9	10
59	Mechanics of Microenvironment as Instructive Cues Guiding Stem Cell Behavior. <i>Current Stem Cell Reports</i> , 2016, 2, 62-72.	1.6	10
60	Precisely parameterized experimental and computational models of tissue organization. <i>Integrative Biology (United Kingdom)</i> , 2016, 8, 230-242.	1.3	10
61	A Loss of Epigenetic Control Can Promote Cell Death through Reversing the Balance of Pathways in a Signaling Network. <i>Molecular Cell</i> , 2018, 72, 60-70.e3.	9.7	10
62	A molecular clock controls periodically driven cell migration in confined spaces. <i>Cell Systems</i> , 2022, 13, 514-529.e10.	6.2	10
63	Modeling and measurement of signaling outcomes affecting decision making in noisy intracellular networks using machine learning methods. <i>Integrative Biology (United Kingdom)</i> , 2020, 12, 122-138.	1.3	6
64	Phosphorylated WNK kinase networks in recoded bacteria recapitulate physiological function. <i>Cell Reports</i> , 2021, 36, 109416.	6.4	5
65	Complex effects of kinase localization revealed by compartment-specific regulation of protein kinase A activity. <i>ELife</i> , 2022, 11, .	6.0	3
66	3D Analysis of Multi-cellular Responses to Chemoattractant Gradients. <i>Journal of Visualized Experiments</i> , 2019, , .	0.3	2
67	MICROPATTERNED POLYMER STRUCTURES FOR CELL AND TISSUE ENGINEERING. , 2010, , 101-120.		0