

David J Odde

List of Publications by Year in descending order

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130
papers

7,468
citations

53794

45
h-index

62596

80
g-index

151
all docs

151
docs citations

151
times ranked

7053
citing authors

#	ARTICLE	IF	CITATIONS
1	Traction Dynamics of Filopodia on Compliant Substrates. <i>Science</i> , 2008, 322, 1687-1691.	12.6	759
2	Laser-guided direct writing of living cells. <i>Biotechnology and Bioengineering</i> , 2000, 67, 312-318.	3.3	277
3	Laser-guided direct writing for applications in biotechnology. <i>Trends in Biotechnology</i> , 1999, 17, 385-389.	9.3	258
4	Laser-guided direct writing for three-dimensional tissue engineering. <i>Biotechnology and Bioengineering</i> , 2005, 92, 129-136.	3.3	249
5	Mechanochemical Model of Microtubule Structure and Self-Assembly Kinetics. <i>Biophysical Journal</i> , 2005, 89, 2911-2926.	0.5	230
6	Estimates of lateral and longitudinal bond energies within the microtubule lattice. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 6035-6040.	7.1	227
7	Shifting the optimal stiffness for cell migration. <i>Nature Communications</i> , 2017, 8, 15313.	12.8	217
8	Potential for Control of Signaling Pathways via Cell Size and Shape. <i>Current Biology</i> , 2006, 16, 1685-1693.	3.9	201
9	Rapid Microtubule Self-Assembly Kinetics. <i>Cell</i> , 2011, 146, 582-592.	28.9	201
10	Determinants of Maximal Force Transmission in a Motor-Clutch Model of Cell Traction in a Compliant Microenvironment. <i>Biophysical Journal</i> , 2013, 105, 581-592.	0.5	185
11	Chromosome Congression by Kinesin-5 Motor-Mediated Disassembly of Longer Kinetochores. <i>Cell</i> , 2008, 135, 894-906.	28.9	168
12	Microtubule Assembly Dynamics at the Nanoscale. <i>Current Biology</i> , 2007, 17, 1445-1455.	3.9	159
13	Stable Kinetochores-Microtubule Attachment Constrains Centromere Positioning in Metaphase. <i>Current Biology</i> , 2004, 14, 1962-1967.	3.9	144
14	Rapid dynamics of the microtubule binding of ensconsin in vivo. <i>Journal of Cell Science</i> , 2001, 114, 3885-3897.	2.0	140
15	Tension-dependent Regulation of Microtubule Dynamics at Kinetochores Can Explain Metaphase Congression in Yeast. <i>Molecular Biology of the Cell</i> , 2005, 16, 3764-3775.	2.1	124
16	Regulation of the MEX-5 Gradient by a Spatially Segregated Kinase/Phosphatase Cycle. <i>Cell</i> , 2011, 146, 955-968.	28.9	122
17	Kinetics of microtubule catastrophe assessed by probabilistic analysis. <i>Biophysical Journal</i> , 1995, 69, 796-802.	0.5	120
18	Micropatterning of living cells by laser-guided direct writing: application to fabrication of hepatic endothelial sinusoid-like structures. <i>Nature Protocols</i> , 2006, 1, 2288-2296.	12.0	117

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19	Evolving Tip Structures Can Explain Age-Dependent Microtubule Catastrophe. <i>Current Biology</i> , 2013, 23, 1342-1348.	3.9	116
20	Enhanced substrate stress relaxation promotes filopodia-mediated cell migration. <i>Nature Materials</i> , 2021, 20, 1290-1299.	27.5	111
21	Integrin-mediated traction force enhances paxillin molecular associations and adhesion dynamics that increase the invasiveness of tumor cells into a three-dimensional extracellular matrix. <i>Molecular Biology of the Cell</i> , 2017, 28, 1467-1488.	2.1	110
22	Tensile Force-Dependent Neurite Elicitation via Anti- β 1 Integrin Antibody-Coated Magnetic Beads. <i>Biophysical Journal</i> , 2003, 85, 623-636.	0.5	102
23	Dynein Tethers and Stabilizes Dynamic Microtubule Plus Ends. <i>Current Biology</i> , 2012, 22, 632-637.	3.9	102
24	Estimating the Microtubule GTP Cap Size In Vivo. <i>Current Biology</i> , 2012, 22, 1681-1687.	3.9	101
25	Mechanisms of Microtubule-Based Kinetochore Positioning in the Yeast Metaphase Spindle. <i>Biophysical Journal</i> , 2003, 84, 3529-3546.	0.5	93
26	Mps1 Phosphorylation of Dam1 Couples Kinetochores to Microtubule Plus Ends at Metaphase. <i>Current Biology</i> , 2006, 16, 1489-1501.	3.9	93
27	Directed cell migration towards softer environments. <i>Nature Materials</i> , 2022, 21, 1081-1090.	27.5	86
28	Anterograde Microtubule Transport Drives Microtubule Bending in LLC-PK1 Epithelial Cells. <i>Molecular Biology of the Cell</i> , 2009, 20, 2943-2953.	2.1	83
29	Biphasic Dependence of Glioma Survival and Cell Migration on CD44 Expression Level. <i>Cell Reports</i> , 2017, 18, 23-31.	6.4	81
30	Micro-Patterning of Animal Cells on PDMS Substrates in the Presence of Serum without Use of Adhesion Inhibitors. <i>Biomedical Microdevices</i> , 2004, 6, 219-222.	2.8	79
31	The Importance of Lattice Defects in Katanin-Mediated Microtubule Severing in Vitro. <i>Biophysical Journal</i> , 2002, 82, 2916-2927.	0.5	75
32	Endothelium-Mediated Hepatocyte Recruitment in the Establishment of Liver-like Tissue In Vitro. <i>Tissue Engineering</i> , 2006, 12, 1627-1638.	4.6	75
33	Minus-End-Directed Kinesin-14 Motors Align Antiparallel Microtubules to Control Metaphase Spindle Length. <i>Developmental Cell</i> , 2014, 31, 61-72.	7.0	71
34	Master Equation-Based Analysis of a Motor-Clutch Model for Cell Traction Force. <i>Cellular and Molecular Bioengineering</i> , 2013, 6, 449-459.	2.1	65
35	Regulation and dynamics of force transmission at individual cell-matrix adhesion bonds. <i>Science Advances</i> , 2020, 6, eaax0317.	10.3	65
36	The microtubule-based motor Kar3 and plus end-binding protein Bim1 provide structural support for the anaphase spindle. <i>Journal of Cell Biology</i> , 2008, 180, 91-100.	5.2	64

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37	mTOR inhibition in COVID-19: A commentary and review of efficacy in RNA viruses. <i>Journal of Medical Virology</i> , 2021, 93, 1843-1846.	5.0	63
38	Mechanisms of kinetic stabilization by the drugs paclitaxel and vinblastine. <i>Molecular Biology of the Cell</i> , 2017, 28, 1238-1257.	2.1	61
39	Microtubule assembly dynamics: new insights at the nanoscale. <i>Current Opinion in Cell Biology</i> , 2008, 20, 64-70.	5.4	57
40	Kinesin-8 molecular motors: putting the brakes on chromosome oscillations. <i>Trends in Cell Biology</i> , 2008, 18, 307-310.	7.9	55
41	Cell-Length-Dependent Microtubule Accumulation during Polarization. <i>Current Biology</i> , 2010, 20, 979-988.	3.9	55
42	Microtubule Tip Tracking and Tip Structures at the Nanometer Scale Using Digital Fluorescence Microscopy. <i>Cellular and Molecular Bioengineering</i> , 2011, 4, 192-204.	2.1	55
43	Estimation of the diffusion-limited rate of microtubule assembly. <i>Biophysical Journal</i> , 1997, 73, 88-96.	0.5	54
44	Model for Protein Concentration Gradients in the Cytoplasm. <i>Cellular and Molecular Bioengineering</i> , 2008, 1, 84-92.	2.1	53
45	Analysis of radiation forces in laser trapping and laser-guided direct writing applications. <i>IEEE Journal of Quantum Electronics</i> , 2002, 38, 131-141.	1.9	48
46	Dimensionless parameters for the design of optical traps and laser guidance systems. <i>Applied Optics</i> , 2004, 43, 3999.	2.1	47
47	Cell Patterning on Biological Gels via Cell Spraying through a Mask. <i>Tissue Engineering</i> , 2005, 11, 701-708.	4.6	47
48	Brownian Dynamics of Subunit Addition-Loss Kinetics and Thermodynamics in Linear Polymer Self-Assembly. <i>Biophysical Journal</i> , 2013, 105, 2528-2540.	0.5	47
49	Dynamics of 3D carcinoma cell invasion into aligned collagen. <i>Integrative Biology (United Kingdom)</i> , 2018, 10, 100-112.	1.3	46
50	Rapid diffusion-state switching underlies stable cytoplasmic gradients in the <i>Caenorhabditis elegans</i> zygote. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, E8440-E8449.	7.1	46
51	Two-step cell patterning on planar and complex curved surfaces by precision spraying of polymers. <i>Biotechnology and Bioengineering</i> , 2006, 93, 919-927.	3.3	44
52	Cell Migration in 1D and 2D Nanofiber Microenvironments. <i>Annals of Biomedical Engineering</i> , 2018, 46, 392-403.	2.5	42
53	Measuring Nanometer Scale Gradients in Spindle Microtubule Dynamics Using Model Convolution Microscopy. <i>Molecular Biology of the Cell</i> , 2006, 17, 4069-4079.	2.1	40
54	Analysis of Microtubule Curvature. <i>Methods in Cell Biology</i> , 2007, 83, 237-268.	1.1	40

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55	Immunoaffinity purification: Basic principles and operational considerations. <i>Biotechnology Advances</i> , 1992, 10, 413-446.	11.7	39
56	Diffusion inside microtubules. <i>European Biophysics Journal</i> , 1998, 27, 514-520.	2.2	39
57	RCC1-dependent activation of Ran accelerates cell cycle and DNA repair, inhibiting DNA damage-induced cell senescence. <i>Molecular Biology of the Cell</i> , 2016, 27, 1346-1357.	2.1	39
58	Myosin IIA suppresses glioblastoma development in a mechanically sensitive manner. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 15550-15559.	7.1	39
59	Stochastic dynamics of the nerve growth cone and its microtubules during neurite outgrowth. , 2000, 50, 452-461.		38
60	Modeling cellular processes in 3D. <i>Trends in Cell Biology</i> , 2011, 21, 692-700.	7.9	38
61	Microtubule-Based Control of Motor-Clutch System Mechanics in Glioma Cell Migration. <i>Cell Reports</i> , 2018, 25, 2591-2604.e8.	6.4	37
62	Quantitative Analysis of Microtubule Self-assembly Kinetics and Tip Structure. <i>Methods in Enzymology</i> , 2014, 540, 35-52.	1.0	36
63	An Indole-Chalcone Inhibits Multidrug-Resistant Cancer Cell Growth by Targeting Microtubules. <i>Molecular Pharmaceutics</i> , 2018, 15, 3892-3900.	4.6	36
64	Glioma Cell Migration Dynamics in Brain Tissue Assessed by Multimodal Optical Imaging. <i>Biophysical Journal</i> , 2019, 117, 1179-1188.	0.5	34
65	Modeling of chromosome motility during mitosis. <i>Current Opinion in Cell Biology</i> , 2006, 18, 639-647.	5.4	33
66	<i>Sleeping Beauty</i> Insertional Mutagenesis Reveals Important Genetic Drivers of Central Nervous System Embryonal Tumors. <i>Cancer Research</i> , 2019, 79, 905-917.	0.9	33
67	Model Convolution: A Computational Approach to Digital Image Interpretation. <i>Cellular and Molecular Bioengineering</i> , 2010, 3, 163-170.	2.1	32
68	Slit-Robo GTPase-Activating Protein 2 as a metastasis suppressor in osteosarcoma. <i>Scientific Reports</i> , 2016, 6, 39059.	3.3	32
69	Autocorrelation Function and Power Spectrum of Two-State Random Processes Used in Neurite Guidance. <i>Biophysical Journal</i> , 1998, 75, 1189-1196.	0.5	29
70	Ex vivo SARS-CoV-2 infection of human lung reveals heterogeneous host defense and therapeutic responses. <i>JCI Insight</i> , 2021, 6, .	5.0	26
71	Assessment of Transport Mechanisms Underlying the Bicoid Morphogen Gradient. <i>Cellular and Molecular Bioengineering</i> , 2011, 4, 116-121.	2.1	24
72	Time series characterization of simulated microtubule dynamics in the nerve growth cone. <i>Annals of Biomedical Engineering</i> , 1995, 23, 268-286.	2.5	23

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73	Modeling Cell Migration Mechanics. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1092, 159-187.	1.6	22
74	Rapid and inefficient kinetics of sickle hemoglobin fiber growth. <i>Science Advances</i> , 2019, 5, eaau1086.	10.3	21
75	Predicting Confined 1D Cell Migration from Parameters Calibrated to a 2D Motor-Clutch Model. <i>Biophysical Journal</i> , 2020, 118, 1709-1720.	0.5	20
76	Hypothesis testing via integrated computer modeling and digital fluorescence microscopy. <i>Methods</i> , 2007, 41, 232-237.	3.8	19
77	Optical Control of Microtubule Dynamics in Time and Space. <i>Cell</i> , 2015, 162, 243-245.	28.9	19
78	Microtubule dynamics: moving toward a multi-scale approach. <i>Current Opinion in Cell Biology</i> , 2018, 50, 8-13.	5.4	19
79	Emerging technologies in mechanotransduction research. <i>Current Opinion in Chemical Biology</i> , 2019, 53, 125-130.	6.1	19
80	Vaccination Against SARS-CoV-2 Is Associated With a Lower Viral Load and Likelihood of Systemic Symptoms. <i>Open Forum Infectious Diseases</i> , 2022, 9, ofac066.	0.9	17
81	Robust Micromechanical Neurite Elicitation in Synapse-Competent Neurons Via Magnetic Bead Force Application. <i>Annals of Biomedical Engineering</i> , 2005, 33, 1229-1237.	2.5	16
82	A Brownian dynamics tumor progression simulator with application to glioblastoma. <i>Convergent Science Physical Oncology</i> , 2018, 4, 015001.	2.6	16
83	Multiscale Computational Modeling of Tubulin-Tubulin Lateral Interaction. <i>Biophysical Journal</i> , 2019, 117, 1234-1249.	0.5	16
84	Stochastic Modeling Yields a Mechanistic Framework for Spindle Attachment Error Correction in Budding Yeast Mitosis. <i>Cell Systems</i> , 2017, 4, 645-650.e5.	6.2	15
85	Getting Cells and Tissues into Shape. <i>Cell</i> , 2011, 144, 325-326.	28.9	14
86	SEMA4C is a novel target to limit osteosarcoma growth, progression, and metastasis. <i>Oncogene</i> , 2020, 39, 1049-1062.	5.9	13
87	Kinetic partitioning during de novo septin filament assembly creates a critical G1 "window of opportunity" for mutant septin function. <i>Cell Cycle</i> , 2016, 15, 2441-2453.	2.6	12
88	Tau Avoids the GTP Cap at Growing Microtubule Plus-Ends. <i>iScience</i> , 2020, 23, 101782.	4.1	12
89	Laser-guided direct writing of living cells. <i>Biotechnology and Bioengineering</i> , 2000, 67, 312.	3.3	12
90	Dystrophin missense mutations alter focal adhesion tension and mechanotransduction. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, .	7.1	12

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91	Mitosis, Diffusible Crosslinkers, and the Ideal Gas Law. <i>Cell</i> , 2015, 160, 1041-1043.	28.9	11
92	Physical limits on kinesin-5 mediated chromosome congression in the smallest mitotic spindles. <i>Molecular Biology of the Cell</i> , 2015, 26, 3999-4014.	2.1	11
93	Monte Carlo simulations of microtubule arrays: The critical roles of rescue transitions, the cell boundary, and tubulin concentration in shaping microtubule distributions. <i>PLoS ONE</i> , 2018, 13, e0197538.	2.5	10
94	A molecular clock controls periodically driven cell migration in confined spaces. <i>Cell Systems</i> , 2022, 13, 514-529.e10.	6.2	10
95	Dam1 complexes go it alone on disassembling microtubules. <i>Nature Cell Biology</i> , 2008, 10, 379-381.	10.3	9
96	A Micro-tool for Mechanical Manipulation of in vitro Cell Arrays. <i>Biomedical Microdevices</i> , 2003, 5, 291-295.	2.8	8
97	Stochastic simulation and graphic visualization of mitotic processes. <i>Methods</i> , 2010, 51, 251-256.	3.8	8
98	Modeling distributed forces within cell adhesions of varying size on continuous substrates. <i>Cytoskeleton</i> , 2019, 76, 571-585.	2.0	7
99	Science+dance=bodystorming. <i>Trends in Cell Biology</i> , 2012, 22, 613-616.	7.9	6
100	Kinesin-5 Mediated Chromosome Congression in Insect Spindles. <i>Cellular and Molecular Bioengineering</i> , 2018, 11, 25-36.	2.1	6
101	Mitotic Spindle: Disturbing a Subtle Balance. <i>Current Biology</i> , 2005, 15, R956-R959.	3.9	5
102	The predicted role of steric specificity in crowding-mediated effects on reversible biomolecular association. <i>Physical Biology</i> , 2015, 12, 066004.	1.8	5
103	Chromosome Capture: Take Me to Your Kinetochore. <i>Current Biology</i> , 2005, 15, R328-R330.	3.9	4
104	Education and Outreach in Physical Sciences in Oncology. <i>Trends in Cancer</i> , 2021, 7, 3-9.	7.4	4
105	Clinically validated model predicts the effect of intratumoral heterogeneity on overall survival for non-small cell lung cancer (NSCLC) patients. <i>Computer Methods and Programs in Biomedicine</i> , 2021, 212, 106455.	4.7	4
106	Atomistic Basis of Microtubule Dynamic Instability Assessed Via Multiscale Modeling. <i>Annals of Biomedical Engineering</i> , 2021, 49, 1716-1734.	2.5	3
107	<title>Nano- and microscale manipulation of biological particles by laser-guided direct writing</title>. , 2002, 4608, 245.		2
108	Predicting Glioblastoma Cellular Motility from In Vivo MRI with a Radiomics Based Regression Model. <i>Cancers</i> , 2022, 14, 578.	3.7	2

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109	A microtool for in vitro cell array manipulation. , 0, , .		1
110	Cellular and Molecular Bioengineering: Editorial Perspective. Cellular and Molecular Bioengineering, 2008, 1, 4-4.	2.1	1
111	Multi-Scale Computational Modeling of Tubulin-Tubulin Interactions in Microtubule Self-Assembly from Atoms to Cells. Biophysical Journal, 2019, 116, 256a.	0.5	1
112	Laser-guided direct writing of living cells. , 2000, 67, 312.		1
113	Abstract A03: A brain cancer cell migration simulator based on a motor-clutch model. , 2015, , .		1
114	Asymmetric Division: Motor Persistence Pays off. Current Biology, 2006, 16, R1021-R1023.	3.9	0
115	Microtubule Bending and Breaking in Cellular Mechanotransduction. , 0, , 234-249.		0
116	Outstanding Papers from the 2009 Biomedical Engineering Society (BMES) Annual Meeting. Cellular and Molecular Bioengineering, 2009, 2, 463-463.	2.1	0
117	Modeling of Motor Mediated Microtubule Bending. Biophysical Journal, 2009, 96, 572a.	0.5	0
118	Highly Variable Microtubule Assembly Dynamics Reflect Near-Kilohertz Kinetics: Evidence Against Traditional Linear Growth Theory. Biophysical Journal, 2010, 98, 363a.	0.5	0
119	Kinetics of Microtubule Assembly. Biophysical Journal, 2011, 100, 530a-531a.	0.5	0
120	Outstanding Papers in Cellular and Molecular Bioengineering from the 2011 Biomedical Engineering Society Annual Meeting. Cellular and Molecular Bioengineering, 2012, 5, 127-127.	2.1	0
121	BMES Editorial. Cellular and Molecular Bioengineering, 2013, 6, 119-119.	2.1	0
122	Introduction to the Special Issue Dedicated to the Memory of Alan J. Hunt. Cellular and Molecular Bioengineering, 2013, 6, 355-355.	2.1	0
123	A Brief Scientific Biography of Prof. Alan J. Hunt. Cellular and Molecular Bioengineering, 2013, 6, 356-360.	2.1	0
124	Optimality of Force Transmission in a Motor-Clutch Cellular Adhesion Model. Biophysical Journal, 2014, 106, 243a.	0.5	0
125	Regulation of Actin Filament Turnover in Brain Tumor Cell Motility. Biophysical Journal, 2014, 106, 359a.	0.5	0
126	Molecular Regulation of Actin Turnover at the Leading Edge of Migrating Cells. Biophysical Journal, 2015, 108, 179a-180a.	0.5	0

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127	Finite Element Modeling of Cell Traction. <i>Biophysical Journal</i> , 2015, 108, 306a.	0.5	0
128	Computational Modeling of Tubulin-Tubulin Lateral Interaction: Molecular Dynamics and Brownian Dynamics. <i>Biophysical Journal</i> , 2018, 114, 503a.	0.5	0
129	Motor Clutch Modeling of Single-Molecule FRET-Based Molecular Tension Sensors. <i>Biophysical Journal</i> , 2019, 116, 415a.	0.5	0
130	A Physical Perspective on Oncology Research: The Critically Emerging Role of Physical Science in the Fight Against Brain Cancer. <i>Advances in Oncology</i> , 2021, 1, 213-221.	0.2	0