

G Wayne Brodland

List of Publications by Year in descending order

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Version: 2024-02-01

70
papers

2,974
citations

196777

29
h-index

198040

52
g-index

71
all docs

71
docs citations

71
times ranked

3169
citing authors

#	ARTICLE	IF	CITATIONS
1	Elongated Cells Drive Morphogenesis in a Surface-Wrapped Finite-Element Model of Germband Retraction. <i>Biophysical Journal</i> , 2019, 117, 157-169.	0.2	5
2	Coordination of Receptor Tyrosine Kinase Signaling and Interfacial Tension Dynamics Drives Radial Intercalation and Tube Elongation. <i>Developmental Cell</i> , 2018, 45, 67-82.e6.	3.1	59
3	Digital tracking algorithm reveals the influence of structural irregularities on joint movements in the human cervical spine. <i>Clinical Biomechanics</i> , 2018, 56, 11-17.	0.5	2
4	Interstitial fluid osmolarity modulates the action of differential tissue surface tension in progenitor cell segregation during gastrulation. <i>Development (Cambridge)</i> , 2017, 144, 1798-1806.	1.2	60
5	Inferring cellular forces from image stacks. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160261.	1.8	41
6	A videofluoroscopy-based tracking algorithm for quantifying the time course of human intervertebral displacements. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2017, 20, 794-802.	0.9	2
7	Non-straight cell edges are important to invasion and engulfment as demonstrated by cell mechanics model. <i>Biomechanics and Modeling in Mechanobiology</i> , 2016, 15, 405-418.	1.4	14
8	How computational models can help unlock biological systems. <i>Seminars in Cell and Developmental Biology</i> , 2015, 47-48, 62-73.	2.3	171
9	Practical aspects of the cellular force inference toolkit (CellFIT). <i>Methods in Cell Biology</i> , 2015, 125, 331-351.	0.5	15
10	CellFIT: A Cellular Force-Inference Toolkit Using Curvilinear Cell Boundaries. <i>PLoS ONE</i> , 2014, 9, e99116.	1.1	94
11	Modeling cell elongation during germ band retraction: cell autonomy versus applied anisotropic stress. <i>New Journal of Physics</i> , 2014, 16, 055003.	1.2	12
12	On the origins of the mitotic shift in proliferating cell layers. <i>Theoretical Biology and Medical Modelling</i> , 2014, 11, 26.	2.1	5
13	Forces driving epithelial wound healing. <i>Nature Physics</i> , 2014, 10, 683-690.	6.5	326
14	Measuring the Modulus of Silicone Hydrogel Contact Lenses. <i>Optometry and Vision Science</i> , 2012, 89, 1468-1476.	0.6	42
15	Assessing the mechanical energy costs of various tissue reshaping mechanisms. <i>Biomechanics and Modeling in Mechanobiology</i> , 2012, 11, 1137-1147.	1.4	8
16	The Mechanics of Metastasis: Insights from a Computational Model. <i>PLoS ONE</i> , 2012, 7, e44281.	1.1	24
17	A Framework for Connecting Gene Expression to Morphogenetic Movements in Embryos. <i>IEEE Transactions on Biomedical Engineering</i> , 2011, 58, 3033-3036.	2.5	5
18	Control of the Mitotic Cleavage Plane by Local Epithelial Topology. <i>Cell</i> , 2011, 144, 427-438.	13.5	173

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19	Identifying Same-Cell Contours in Image Stacks: A Key Step in Making 3D Reconstructions. <i>Annals of Biomedical Engineering</i> , 2011, 39, 698-705.	1.3	4
20	Novel lap test determines the mechanics of delamination between annular lamellae of the intervertebral disc. <i>Journal of Biomechanics</i> , 2011, 44, 97-102.	0.9	21
21	DRhoGEF2 Regulates Cellular Tension and Cell Pulsations in the Amnioserosa during <i>Drosophila</i> Dorsal Closure. <i>PLoS ONE</i> , 2011, 6, e23964.	1.1	44
22	Cinemechanometry (CMM): A Method to Determine the Forces that Drive Morphogenetic Movements from Time-Lapse Images. <i>Annals of Biomedical Engineering</i> , 2010, 38, 2937-2947.	1.3	16
23	Biaxial mechanical testing of human sclera. <i>Journal of Biomechanics</i> , 2010, 43, 1696-1701.	0.9	114
24	Video force microscopy reveals the mechanics of ventral furrow invagination in <i>Drosophila</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 22111-22116.	3.3	155
25	From genes to neural tube defects (NTDs): Insights from multiscale computational modeling. <i>HFSP Journal</i> , 2010, 4, 142-152.	2.5	32
26	Cellular interfacial and surface tensions determined from aggregate compression tests using a finite element model. <i>HFSP Journal</i> , 2009, 3, 273-281.	2.5	27
27	Strain Uniformity in Biaxial Specimens is Highly Sensitive to Attachment Details. <i>Journal of Biomechanical Engineering</i> , 2009, 131, 091003.	0.6	67
28	Detection of mitoses in embryonic epithelia using motion field analysis. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2009, 12, 151-163.	0.9	1
29	Estimating Interfacial Tension from the Shape Histories of Cells in Compressed Aggregates: A Computational Study. <i>Annals of Biomedical Engineering</i> , 2009, 37, 1019-1027.	1.3	10
30	Detecting Mitoses in Time-Lapse Images of Embryonic Epithelia Using Intensity Analysis. <i>Annals of Biomedical Engineering</i> , 2009, 37, 2646-2655.	1.3	1
31	Mechanical determinants of epithelium thickness in early-stage embryos. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2009, 2, 494-501.	1.5	22
32	Combining Laser Microsurgery and Finite Element Modeling to Assess Cell-Level Epithelial Mechanics. <i>Biophysical Journal</i> , 2009, 97, 3075-3085.	0.2	80
33	Cell Sorting in Three Dimensions: Topology, Fluctuations, and Fluidlike Instabilities. <i>Physical Review Letters</i> , 2008, 101, 148105.	2.9	36
34	Multi-scale finite element modeling allows the mechanics of amphibian neurulation to be elucidated. <i>Physical Biology</i> , 2008, 5, 015003.	0.8	63
35	Estimation of cellular fabric in embryonic epithelia. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2007, 10, 75-84.	0.9	9
36	A Three-dimensional Finite Element Model for the Mechanics of Cell-Cell Interactions. <i>Journal of Biomechanical Engineering</i> , 2007, 129, 651.	0.6	26

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37	Automated Detection of Mitosis in Embryonic Tissues. , 2007, , .		7
38	A new cell-based FE model for the mechanics of embryonic epithelia. Computer Methods in Biomechanics and Biomedical Engineering, 2007, 10, 121-128.	0.9	51
39	Measurement of in vivo Stress Resultants in Neurulation-stage Amphibian Embryos. Annals of Biomedical Engineering, 2007, 35, 672-681.	1.3	30
40	The mechanics of neurulation: Insights from a whole-embryo computational model. FASEB Journal, 2007, 21, A199.	0.2	0
41	A cell-based constitutive model for embryonic epithelia and other planar aggregates of biological cells. International Journal of Plasticity, 2006, 22, 965-995.	4.1	51
42	High strain rate compressive properties of bovine muscle tissue determined using a split Hopkinson bar apparatus. Journal of Biomechanics, 2006, 39, 1852-1858.	0.9	104
43	Lamellipodium-driven tissue reshaping: A parametric study. Computer Methods in Biomechanics and Biomedical Engineering, 2006, 9, 17-23.	0.9	16
44	The Mechanics of Early Embryo Development: Insights from Finite Element Modeling. , 2006, , 459-469.		2
45	Tensile properties of embryonic epithelia measured using a novel instrument. Journal of Biomechanics, 2005, 38, 2087-2094.	0.9	80
46	Automated 3-D Reconstruction of the Surface of Live Early-Stage Amphibian Embryos. IEEE Transactions on Biomedical Engineering, 2005, 52, 1407-1414.	2.5	8
47	Multiview Robotic Microscope Reveals the In-plane Kinematics of Amphibian Neurulation. Annals of Biomedical Engineering, 2005, 33, 821-828.	1.3	23
48	Computational modeling of cell sorting, tissue engulfment, and related phenomena: A review. Applied Mechanics Reviews, 2004, 57, 47-76.	4.5	80
49	Design Expressions Based on a Finite Element Model of a Stiffened Cold-Formed Steel C-Section. Journal of Structural Engineering, 2004, 130, 708-714.	1.7	0
50	Mechanical Effects of Cell Anisotropy on Epithelia. Computer Methods in Biomechanics and Biomedical Engineering, 2004, 7, 91-99.	0.9	31
51	A Computer Model for Reshaping of Cells in Epithelia Due to In-plane Deformation and Annealing. Computer Methods in Biomechanics and Biomedical Engineering, 2003, 6, 89-98.	0.9	16
52	New information from cell aggregate compression tests and its implications for theories of cell sorting. Biorheology, 2003, 40, 273-7.	1.2	17
53	The Differential Interfacial Tension Hypothesis (DITH): A Comprehensive Theory for the Self-Rearrangement of Embryonic Cells and Tissues. Journal of Biomechanical Engineering, 2002, 124, 188-197.	0.6	221
54	Computer simulations of mitosis and interdependencies between mitosis orientation, cell shape and epithelia reshaping. Journal of Biomechanics, 2002, 35, 673-681.	0.9	44

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55	The mechanics of cell sorting and envelopment. <i>Journal of Biomechanics</i> , 2000, 33, 845-851.	0.9	55
56	The Mechanics of Heterotypic Cell Aggregates: Insights From Computer Simulations. <i>Journal of Biomechanical Engineering</i> , 2000, 122, 402-407.	0.6	68
57	Cell-Level Finite Element Studies of Viscous Cells in Planar Aggregates. <i>Journal of Biomechanical Engineering</i> , 2000, 122, 394-401.	0.6	93
58	Fluid and Matrix Components of Polyurethane Foam Behavior Under Cyclic Compression. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 1996, 118, 58-62.	0.8	10
59	Morphogenetic movements during axolotl neural tube formation tracked by digital imaging. <i>Roux's Archives of Developmental Biology</i> , 1996, 205, 311-318.	1.2	10
60	Cytoskeletal mechanics of neurulation: insights obtained from computer simulations. <i>Biochemistry and Cell Biology</i> , 1995, 73, 545-553.	0.9	15
61	Convergence Acceleration for Iterative Finite-Element Methods. <i>Journal of Engineering Mechanics - ASCE</i> , 1995, 121, 1-6.	1.6	4
62	Furrowing surface contraction wave coincident with primary neural induction in amphibian embryos. <i>Journal of Morphology</i> , 1994, 219, 131-142.	0.6	39
63	Finite Element Methods for Developmental Biology. <i>International Review of Cytology</i> , 1994, 150, 95-118.	6.2	17
64	Mechanics and Failure of Multilayer, Reinforced Membranes. <i>Journal of Materials in Civil Engineering</i> , 1993, 5, 293-307.	1.3	3
65	Large-Strain Analysis of Reinforced Membranes. <i>Journal of Engineering Mechanics - ASCE</i> , 1993, 119, 2461-2477.	1.6	2
66	ON SQUARE HOLES IN PENNATE DIATOMS. <i>Diatom Research</i> , 1990, 5, 409-413.	0.5	14
67	Deflection and Snapping of Ring-Loaded Spherical Caps. <i>Journal of Applied Mechanics, Transactions ASME</i> , 1989, 56, 127-132.	1.1	5
68	Highly non-linear deformation of uniformly-loaded circular plates. <i>International Journal of Solids and Structures</i> , 1988, 24, 351-362.	1.3	10
69	Analysis of strain averaged data from finite length gauges and predictions of peak strain for planar notch and fillet problems. <i>Strain</i> , 1988, 24, 147-152.	1.4	1
70	The cytoskeletal mechanics of brain morphogenesis. <i>Cell Biophysics</i> , 1987, 11, 177-238.	0.4	60