Lance A Davidson

List of Publications by Year
in descending order

97
papers

4,352
citations

136950
32
h-index

123424
61
g-index

130
all docs

130
docs citations

130
times ranked

3877
citing authors

#	Article	IF	Citations
1	Chambers for Culturing and Immobilizing <i>Xenopus</i> Embryos and Organotypic Explants for Live Imaging. Cold Spring Harbor Protocols, 2022, 2022, pdb.prot107649.	0.3	3
2	Imaging Methods in <i>Xenopus</i> Cells, Embryos, and Tadpoles. Cold Spring Harbor Protocols, 2022, 2022, pdb.top105627.	0.3	0
3	Microsurgical Methods to Isolate and Culture the Early Gastrula Dorsal Marginal Zone.. Cold Spring Harbor Protocols, 2022, , .	0.3	0
4	Microsurgical Manipulations to Isolate Collectively Migrating Mesendoderm.. Cold Spring Harbor Protocols, 2022, , .	0.3	0
5	Microsurgical Methods to Make the Keller Sandwich Explant and the Dorsal Isolate.. Cold Spring Harbor Protocols, 2022, , .	0.3	0
6	Furry is required for cell movements during gastrulation and functionally interacts with NDR1. Scientific Reports, 2021, 11, 6607.	3.3	3
7	Xenopus Deep Cell Aggregates: A 3D Tissue Model for Mesenchymal-to-Epithelial Transition. Methods in Molecular Biology, 2021, 2179, 275-287.	0.9	0
8	Endothelial cell polarization and orientation to flow in a novel microfluidic multimodal shear stress generator. Lab on A Chip, 2020, 20, 4373-4390.	6.0	28
9	Non-junctional role of Cadherin3 in cell migration and contact inhibition of locomotion via domain-dependent, opposing regulation of Rac1. Scientific Reports, 2020, 10, 17326.	3.3	9
10	From biomechanics to mechanobiology: Xenopus provides direct access to the physical principles that shape the embryo. Current Opinion in Genetics and Development, 2020, 63, 71-77.	3.3	11
11	Tissue mechanics drives regeneration of a mucociliated epidermis on the surface of Xenopus embryonic aggregates. Nature Communications, 2020, 11, 665.	12.8	18
12	Chemotactic Responses of Jurkat Cells in Microfluidic Flow-Free Gradient Chambers. Micromachines, 2020, 11, 384.	2.9	6
13	Evolutionary expansion of apical extracellular matrix is required for the elongation of cells in a novel structure. ELife, 2020, 9, .	6.0	23
14	Using a continuum model to decipher the mechanics of embryonic tissue spreading from time-lapse image sequences: An approximate Bayesian computation approach. PLoS ONE, 2019, 14, e0218021.	2.5	5
15	Adapting a Plant Tissue Model to Animal Development: Introducing Cell Sliding into VirtualLeaf. Bulletin of Mathematical Biology, 2019, 81, 3322-3341.	1.9	7
16	Anillin regulates epithelial cell mechanics by structuring the medial-apical actomyosin network. ELife, 2019, 8, .	6.0	35
17	The non-canonical Wnt-PCP pathway shapes the caudal neural plate. Development (Cambridge), 2018, 145, .	2.5	22
18	Editorial: Developmental mechanisms, patterning and evolution (2018). Current Opinion in Genetics and Development, 2018, 51, iii-v.	3.3	0

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19	From pattern to process: studies at the interface of gene regulatory networks, morphogenesis, and evolution. Current Opinion in Genetics and Development, 2018, 51, 103-110.	3.3	36
20	Multiscale analysis of architecture, cell size and the cell cortex reveals cortical F-actin density and composition are major contributors to mechanical properties during convergent extension. Development (Cambridge), 2018, 145, .	2.5	22
21	Emergent mechanics of actomyosin drive punctuated contractions and shape network morphology in the cell cortex. PLoS Computational Biology, 2018, 14, e1006344.	3.2	10
22	Large, long range tensile forces drive convergence during Xenopus blastopore closure and body axis elongation. ELife, 2018, 7, .	6.0	50
23	Chemotaxis of Immune Cells in Microfluidic Flow-Free Concentration Gradient Generator. Biophysical Journal, 2018, 114, 217a.	0.5	0
24	On the role of mechanics in driving mesenchymal-to-epithelial transitions. Seminars in Cell and Developmental Biology, 2017, 67, 113-122.	5.0	54
25	<i>Xenopus</i> as a model for studies in mechanical stress and cell division. Genesis, 2017, 55, e23004.	1.6	14
26	Spatiotemporally Controlled Mechanical Cues Drive Progenitor Mesenchymal-to-Epithelial Transition Enabling Proper Heart Formation and Function. Current Biology, 2017, 27, 1326-1335.	3.9	24
27	Actomyosin meshwork mechanosensing enables tissue shape to orient cell force. Nature Communications, 2017, 8, 15014.	12.8	125
28	Mechanical design in embryos: mechanical signalling, robustness and developmental defects. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20150516.	4.0	34
29	Mechanics of neurulation: From classical to current perspectives on the physical mechanics that shape, fold, and form the neural tube. Birth Defects Research, 2017, 109, 153-168.	1.5	55
30	Developing <i>Xenopus</i> embryos recover by compacting and expelling single wall carbon nanotubes. Journal of Applied Toxicology, 2016, 36, 579-585.	2.8	5
31	Placental Mechanics in the Zika-Microcephaly Relationship. Cell Host and Microbe, 2016, 20, 9-11.	11.0	15
32	Distribution of single wall carbon nanotubes in the Xenopus laevis embryo after microinjection. Journal of Applied Toxicology, 2016, 36, 568-578.	2.8	6
33	Shroom3 functions downstream of planar cell polarity to regulate myosin II distribution and cellular organization during neural tube closure. Biology Open, 2015, 4, 186-196.	1.2	76
34	High Local Curvature Reduces Migration Rate in Spreading Multi-Layer Tissues. Biophysical Journal, 2015, 108, 455a.	0.5	0
35	Mechanics of blastopore closure during amphibian gastrulation. Developmental Biology, 2015, 398, 57-67.	2.0	30
36	Tissue mechanics and adhesion during embryo development. Developmental Biology, 2015, 401, 152-164.	2.0	56

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37	Force production and mechanical accommodation during convergent extension. Development (Cambridge), 2015, 142, 692-701.	2.5	69
38	3D bio-etching of a complex composite-like embryonic tissue. Lab on A Chip, 2015, 15, 3293-3299.	6.0	4
39	Controlled surface topography regulates collective 3D migration by epithelialâ€"mesenchymal composite embryonic tissues. Biomaterials, 2015, 58, 1-9.	11.4	21
40	Biomechanics and the Thermotolerance of Development. PLoS ONE, 2014, 9, e95670.	2.5	11
41	Mechanochemical actuators of embryonic epithelial contractility. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14366-14371.	7.1	34
42	Cell segregation, mixing, and tissue pattern in the spinal cord of the <i>Xenopus laevis</i> neurula. Developmental Dynamics, 2013, 242, 1134-1146.	1.8	7
43	Investigating Morphogenesis in <i>Xenopus</i> Embryos: Imaging Strategies, Processing, and Analysis. Cold Spring Harbor Protocols, 2013, 2013, pdb.top073890.	0.3	10
44	The interplay between cell signalling and mechanics in developmental processes. Nature Reviews Genetics, 2013, 14, 733-744.	16.3	178
45	Preparation and Use of Reporter Constructs for Imaging Morphogenesis in Xenopus Embryos. Cold Spring Harbor Protocols, 2013, 2013, pdb.prot073866-pdb.prot073866.	0.3	4
46	Microsurgical Approaches to Isolate Tissues from Xenopus Embryos for Imaging Morphogenesis. Cold Spring Harbor Protocols, 2013, 2013, pdb.prot073874-pdb.prot073874.	0.3	7
47	Assembly of Chambers for Stable Long-Term Imaging of Live Xenopus Tissue. Cold Spring Harbor Protocols, 2013, 2013, pdb.prot073882-pdb.prot073882.	0.3	6
48	Epithelial machines of morphogenesis and their potential application in organ assembly and tissue engineering. Biomechanics and Modeling in Mechanobiology, 2012, 11, 1109-1121.	2.8	14
49	No strings attached: new insights into epithelial morphogenesis. BMC Biology, 2012, 10, 105.	3.8	9
50	Microscopy Tools for Quantifying Developmental Dynamics in Xenopus Embryos. Methods in Molecular Biology, 2012, 917, 477-493.	0.9	7
51	Making waves: the rise and fall and rise of quantitative developmental biology. Development (Cambridge), 2012, 139, 3065-3069.	2.5	5
52	Rotational model for actin filament alignment by myosin. Journal of Theoretical Biology, 2012, 300, 344-359.	1.7	6
53	Epithelial machines that shape the embryo. Trends in Cell Biology, 2012, 22, 82-87.	7.9	77
54	Epithelial machines of morphogenesis and their potential application in organ assembly and tissue engineering. , 2012, 11, 1109.		1

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55	Embryo Mechanics. Current Topics in Developmental Biology, 2011, 95, 215-241.	2.2	50
56	Dynamic control of 3D chemical profiles with a single 2D microfluidic platform. Lab on A Chip, 2011, 11, 2182.	6.0	12
57	Quantitative microscopy and imaging tools for the mechanical analysis of morphogenesis. Current Opinion in Genetics and Development, 2011, 21, 664-670.	3.3	15
58	Detection of Dynamic Spatiotemporal Response to Periodic Chemical Stimulation in a Xenopus Embryonic Tissue. PLoS ONE, 2011, 6, e14624.	2.5	35
59	Whole-Cell Electrical Activity Under Direct Mechanical Stimulus by AFM Cantilever Using Planar Patch Clamp Chip Approach. Cellular and Molecular Bioengineering, 2011, 4, 270-280.	2.1	11
60	Physics and the canalization of morphogenesis: a grand challenge in organismal biology. Physical Biology, 2011, 8, 045002.	1.8	34
61	Punctuated actin contractions during convergent extension and their permissive regulation by the non-canonical Wnt-signaling pathway. Journal of Cell Science, 2011, 124, 635-646.	2.0	130
62	Live-cell Imaging and Quantitative Analysis of Embryonic Epithelial Cells in Xenopus laevis. Journal of Visualized Experiments, 2010, , .	0.3	11
63	Emergent morphogenesis: Elastic mechanics of a self-deforming tissue. Journal of Biomechanics, 2010, 43, 63-70.	2.1	55
64	Experimental control of excitable embryonic tissues: three stimuli induce rapid epithelial contraction. Experimental Cell Research, 2010, 316, 103-114.	2.6	36
65	Surprisingly Simple Mechanical Behavior of a Complex Embryonic Tissue. PLoS ONE, 2010, 5, e15359.	2.5	58
66	Macroscopic stiffening of embryonic tissues via microtubules, RhoGEF and the assembly of contractile bundles of actomyosin. Development (Cambridge), 2010, 137, 2785-2794.	2.5	63
67	The Physical Mechanical Processes that Shape Tissues in the Early Embryo. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2010, , 71-97.	1.0	1
68	Actomyosin stiffens the vertebrate embryo during crucial stages of elongation and neural tube closure. Development (Cambridge), 2009, 136, 677-688.	2.5	193
69	Natural variation in embryo mechanics: gastrulation in <i>Xenopus laevis</i> is highly robust to variation in tissue stiffness. Developmental Dynamics, 2009, 238, 2-18.	1.8	50
70	The physical state of fibronectin matrix differentially regulates morphogenetic movements in vivo. Developmental Biology, 2009, 327, 386-398.	2.0	88
71	Multi-scale mechanics from molecules to morphogenesis. International Journal of Biochemistry and Cell Biology, 2009, 41, 2147-2162.	2.8	66
72	Stepwise Maturation of Apicobasal Polarity of the Neuroepithelium Is Essential for Vertebrate Neurulation. Journal of Neuroscience, 2009, 29, 11426-11440.	3.6	30

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73	Structural Requirements for PACSIN/Syndapin Operation during Zebrafish Embryonic Notochord Development. PLoS ONE, 2009, 4, e8150.	2.5	39
74	Scalable and Concise Synthesis of Dichlorofluorescein Derivatives Displaying Tissue Permeation in Live Zebrafish Embryos. ChemBioChem, 2008, 9, 214-218.	2.6	25
75	Live imaging of cell protrusive activity, and extracellular matrix assembly and remodeling during morphogenesis in the frog, <i>Xenopus laevis</i>. Developmental Dynamics, 2008, 237, 2684-2692.	1.8	83
76	Integrating Morphogenesis with Underlying Mechanics and Cell Biology. Current Topics in Developmental Biology, 2008, 81, 113-133.	2.2	22
77	Taming the Tiger of Tissue Aggregation: How Epithelia Control Structural Assembly of Underlying Cells. Developmental Cell, 2008, 14, 152-154.	7.0	3
78	Apoptosis Turbocharges Epithelial Morphogenesis. Science, 2008, 321, 1641-1642.	12.6	3
79	IQGAP1 regulates cell motility by linking growth factor signaling to actin assembly. Journal of Cell Science, 2007, 120, 658-669.	2.0	118
80	Using Xenopus Embryos to Investigate Integrin Function. Methods in Enzymology, 2007, 426, 403-414.	1.0	10
81	Measuring Mechanical Properties of Embryos and Embryonic Tissues. Methods in Cell Biology, 2007, 83, 425-439.	1.1	31
82	Variation and robustness of the mechanics of gastrulation: The role of tissue mechanical properties during morphogenesis. Birth Defects Research Part C: Embryo Today Reviews, 2007, 81, 253-269.	3.6	28
83	Convergent extension and the hexahedral cell. Nature Cell Biology, 2007, 9, 1010-1015.	10.3	27
84	The forces that shape the embryo: biomechanics of gastrulation.. FASEB Journal, 2007, 21, A198.	0.5	0
85	Radial intercalation of ciliated cells during Xenopus skin development. Development (Cambridge), 2006, 133, 2507-2515.	2.5	116
86	Integrin Î±5Î²1 and Fibronectin Regulate Polarized Cell Protrusions Required for Xenopus Convergence and Extension. Current Biology, 2006, 16, 833-844.	3.9	190
87	Planar Cell Polarity Genes Regulate Polarized Extracellular Matrix Deposition during Frog Gastrulation. Current Biology, 2005, 15, 787-793.	3.9	124
88	Patterning and tissue movements in a novel explant preparation of the marginal zone of Xenopus laevis. Gene Expression Patterns, 2004, 4, 457-466.	0.8	27
89	Self-organization of vertebrate mesoderm based on simple boundary conditions. Developmental Dynamics, 2004, 231, 576-581.	1.8	33
90	Assembly and remodeling of the fibrillar fibronectin extracellular matrix during gastrulation and neurulation inXenopus laevis. Developmental Dynamics, 2004, 231, 888-895.	1.8	122

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91	Multicellular computer simulation of morphogenesis: blastocoel roof thinning and matrix assembly in Xenopus laevis. Developmental Biology, 2004, 271, 210-222.	2.0	59
92	BMP antagonism by Spemann's organizer regulates rostralâ€"caudal fate of mesoderm. Developmental Biology, 2004, 275, 356-374.	2.0	23
93	How we are shaped: The biomechanics of gastrulation. Differentiation, 2003, 71, 171-205.	1.9	407
94	Mesendoderm Extension and Mantle Closure in Xenopus laevis Gastrulation: Combined Roles for Integrin Î±5Î²1, Fibronectin, and Tissue Geometry. Developmental Biology, 2002, 242, 109-129.	2.0	150
95	Embryonic wound healing by apical contraction and ingression inXenopus laevis. Cytoskeleton, 2002, 53, 163-176.	4.4	67
96	Mechanisms of convergence and extension by cell intercalation. Philosophical Transactions of the Royal Society B: Biological Sciences, 2000, 355, 897-922.	4.0	446
97	Cell Crawling, Cell Behaviour and Biomechanics during Convergence and Extension. , 0, , 277-297.		3