James A Sharpe

List of Publications by Year
in descending order

101 papers	8,397 citations	53660 45 h-index	49773 87 g-index
111 all docs	111 docs citations	111 times ranked	9163 citing authors

#	Article	IF	Citations
1	Optical Projection Tomography as a Tool for 3D Microscopy and Gene Expression Studies. Science, 2002, 296, 541-545.	6.0	1,129
2	Senescence Is a Developmental Mechanism that Contributes to Embryonic Growth and Patterning. Cell, 2013, 155, 1119-1130.	13.5	898
3	Digit patterning is controlled by a Bmp-Sox9-Wnt Turing network modulated by morphogen gradients. Science, 2014, 345, 566-570.	6.0	413
4	Positional information and reaction-diffusion: two big ideas in developmental biology combine. Development (Cambridge), 2015, 142, 1203-1211.	1.2	317
5	<i>Hox</i> Genes Regulate Digit Patterning by Controlling the Wavelength of a Turing-Type Mechanism. Science, 2012, 338, 1476-1480.	6.0	309
6	Reprogramming Hox Expression in the Vertebrate Hindbrain: Influence of Paraxial Mesoderm and Rhombomere Transposition. Neuron, 1996, 16, 487-500.	3.8	189
7	Tomographic molecular imaging and 3D quantification within adult mouse organs. Nature Methods, 2007, 4, 31-33.	9.0	178
8	The Role of Spatially Controlled Cell Proliferation in Limb Bud Morphogenesis. PLoS Biology, 2010, 8, e1000420.	2.6	175
9	Optical Projection Tomography. Annual Review of Biomedical Engineering, 2004, 6, 209-228.	5.7	174
10	Optical projection tomography as a new tool for studying embryo anatomy. Journal of Anatomy, 2003, 202, 175-181.	0.9	156
11	An atlas of gene regulatory networks reveals multiple threeâ€gene mechanisms for interpreting morphogen gradients. Molecular Systems Biology, 2010, 6, 425.	3.2	153
12	Selectivity, sharing and competitive interactions in the regulation of Hoxb genes. EMBO Journal, 1998, 17, 1788-1798.	3.5	145
13	Mechanobiology of embryonic skeletal development: Insights from animal models. Birth Defects Research Part C: Embryo Today Reviews, 2010, 90, 203-213.	3.6	134
14	A unified design space of synthetic stripe-forming networks. Nature Communications, 2014, 5, 4905.	5.8	128
15	Visualizing Plant Development and Gene Expression in Three Dimensions Using Optical Projection Tomography. Plant Cell, 2006, 18, 2145-2156.	3.1	127
16	Identification of Sonic hedgehog as a candidate gene responsible for the polydactylous mouse mutant Sasquatch. Current Biology, 1999, 9, 97-S1.	1.8	125
17	Perspective: The promise of multi-cellular engineered living systems. APL Bioengineering, 2018, 2, 040901.	3.3	110
18	EMAP and EMAGE: A Framework for Understanding Spatially Organized Data. Neuroinformatics, 2003, 1, 309-326.	1.5	109

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19	High-throughput mathematical analysis identifies Turing networks for patterning with equally diffusing signals. ELife, 2016, 5, .	2.8	108
20	Dynamical feature extraction at the sensory periphery guides chemotaxis. ELife, 2015, 4, .	2.8	107
21	pMHC affinity controls duration of CD8+ T cellâ€“DC interactions and imprints timing of effector differentiation versus expansion. Journal of Experimental Medicine, 2016, 213, 2811-2829.	4.2	101
22	Correction of artefacts in optical projection tomography. Physics in Medicine and Biology, 2005, 50, 4645-4665.	1.6	99
23	Decrease in Cell Volume Generates Contractile Forces Driving Dorsal Closure. Developmental Cell, 2015, 33, 611-621.	3.1	99
24	Resolution improvement in emission optical projection tomography. Physics in Medicine and Biology, 2007, 52, 2775-2790.	1.6	95
25	In vitro whole-organ imaging: 4D quantification of growing mouse limb buds. Nature Methods, 2008, 5, 609-612.	9.0	95
26	Quantification and Three-Dimensional Imaging of the Insulitis-Induced Destruction of Î²-Cells in Murine Type 1 Diabetes. Diabetes, 2010, 59, 1756-1764.	0.3	88
27	Turing patterns in development: what about the horse part?. Current Opinion in Genetics and Development, 2012, 22, 578-584.	1.5	87
28	3D representation of Wnt and Frizzled gene expression patterns in the mouse embryo at embryonic day 11.5 (Ts19). Gene Expression Patterns, 2008, 8, 331-348.	0.3	84
29	Image formation by linear and nonlinear digital scanned light-sheet fluorescence microscopy with Gaussian and Bessel beam profiles. Biomedical Optics Express, 2012, 3, 1492.	1.5	83
30	The fin-to-limb transition as the re-organization of a Turing pattern. Nature Communications, 2016, 7, 11582.	5.8	80
31	A Local, Self-Organizing Reaction-Diffusion Model Can Explain Somite Patterning in Embryos. Cell Systems, 2015, 1, 257-269.	2.9	79
32	Computer modeling in developmental biology: growing today, essential tomorrow. Development (Cambridge), 2017, 144, 4214-4225.	1.2	78
33	3 dimensional modelling of early human brain development using optical projection tomography. BMC Neuroscience, 2004, 5, 27.	0.8	69
34	Spleen versus pancreas: strict control of organ interrelationship revealed by analyses of Bapx1-/- mice. Genes and Development, 2006, 20, 2208-2213.	2.7	68
35	Three-Dimensional Imaging of Drosophila melanogaster. PLoS ONE, 2007, 2, e834.	1.1	66
36	Scapula development is governed by genetic interactions of<i>Pbx1</i>with its family members and with<i>Emx2</i>via their cooperative control of<i>Alx1</i>. Development (Cambridge), 2010, 137, 2559-2569.	1.2	65

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37	Cell tracing reveals a dorsoventral lineage restriction plane in the mouse limb bud mesenchyme. Development (Cambridge), 2007, 134, 3713-3722.	1.2	64
38	Fluorescence lifetime optical projection tomography. Journal of Biophotonics, 2008, 1, 390-394.	1.1	62
39	A spectrum of modularity in multiâ€functional gene circuits. Molecular Systems Biology, 2017, 13, 925.	3.2	62
40	Personalized Respiratory Medicine: Exploring the Horizon, Addressing the Issues. Summary of a BRN-AJRCCM Workshop Held in Barcelona on June 12, 2014. American Journal of Respiratory and Critical Care Medicine, 2015, 191, 391-401.	2.5	61
41	FishNet: an online database of zebrafish anatomy. BMC Biology, 2007, 5, 34.	1.7	56
42	Immobilized chicks as a model system for earlyâ€onset developmental dysplasia of the hip. Journal of Orthopaedic Research, 2014, 32, 777-785.	1.2	56
43	Live optical projection tomography. Organogenesis, 2009, 5, 211-216.	0.4	49
44	4D retrospective lineage tracing using SPIM for zebrafish organogenesis studies. Journal of Biophotonics, 2011, 4, 122-134.	1.1	49
45	Evidence that Fgf10 contributes to the skeletal and visceral defects of an apert syndrome mouse model. Developmental Dynamics, 2009, 238, 376-385.	0.8	48
46	Joint shape morphogenesis precedes cavitation of the developing hip joint. Journal of Anatomy, 2014, 224, 482-489.	0.9	48
47	High-resolution three-dimensional imaging of islet-infiltrate interactions based on optical projection tomography assessments of the intact adult mouse pancreas. Journal of Biomedical Optics, 2008, 13, 1.	1.4	46
48	Budding behaviors: Growth of the limb as a model of morphogenesis. Developmental Dynamics, 2011, 240, 1054-1062.	0.8	46
49	<i>N-myc</i>Controls Proliferation, Morphogenesis, and Patterning of the Inner Ear. Journal of Neuroscience, 2011, 31, 7178-7189.	1.7	46
50	A shift in anteriorâ€"posterior positional information underlies the fin-to-limb evolution. ELife, 2015, 4, .	2.8	46
51	Image Processing Assisted Algorithms for Optical Projection Tomography. IEEE Transactions on Medical Imaging, 2012, 31, 1-15.	5.4	45
52	OPTiSPIM: integrating optical projection tomography in light sheet microscopy extends specimen characterization to nonfluorescent contrasts. Optics Letters, 2014, 39, 1053.	1.7	44
53	3D confocal reconstruction of gene expression in mouse. Mechanisms of Development, 2001, 100, 59-63.	1.7	43
54	Localization and fate of Fgf10-expressing cells in the adult mouse brain implicate Fgf10 in control of neurogenesis. Molecular and Cellular Neurosciences, 2008, 37, 857-868.	1.0	43

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55	Dynamics of gene circuits shapes evolvability. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 2103-2108.	3.3	42
56	Genetic background influences embryonic lethality and the occurrence of neural tube defects in Men1 null mice: relevance to genetic modifiers. Journal of Endocrinology, 2009, 203, 133-142.	1.2	38
57	Key Features of Turing Systems are Determined Purely by Network Topology. Physical Review X, 2018, 8, .	2.8	38
58	Near Infrared Optical Projection Tomography for Assessments of β-cell Mass Distribution in Diabetes Research. Journal of Visualized Experiments, 2013, , e50238.	0.2	37
59	Clonal Analysis in Mice Underlines the Importance of Rhombomeric Boundaries in Cell Movement Restriction during Hindbrain Segmentation. PLoS ONE, 2010, 5, e10112.	1.1	37
60	A landmark-free morphometric staging system for the mouse limb bud. Development (Cambridge), 2011, 138, 1227-1234.	1.2	36
61	Dataâ€driven modelling of a gene regulatory network for cell fate decisions in the growing limbÂbud. Molecular Systems Biology, 2015, 11, 815.	3.2	36
62	A GDF5 Point Mutation Strikes Twice - Causing BDA1 and SYNS2. PLoS Genetics, 2013, 9, e1003846.	1.5	34
63	Synthetic circuits reveal how mechanisms of gene regulatory networks constrain evolution. Molecular Systems Biology, 2018, 14, e8102.	3.2	34
64	ya||a: GPU-Powered Spheroid Models for Mesenchyme and Epithelium. Cell Systems, 2019, 8, 261-266.e3.	2.9	33
65	Widespread tangential dispersion and extensive cell death during early neurogenesis in the mouse neocortex. Developmental Biology, 2004, 267, 109-118.	0.9	32
66	Control of pelvic girdle development by genes of the Pbx family and <i>Emx2</i>. Developmental Dynamics, 2011, 240, 1173-1189.	0.8	32
67	A Computational Clonal Analysis of the Developing Mouse Limb Bud. PLoS Computational Biology, 2011, 7, e1001071.	1.5	32
68	A global â€œimagingâ€™â€™ view on systems approaches in immunology. European Journal of Immunology, 2012, 42, 3116-3125.	1.6	32
69	Naive B-cell trafficking is shaped by local chemokine availability and LFA-1â€"independent stromal interactions. Blood, 2013, 121, 4101-4109.	0.6	32
70	Wolpert's French Flag: what's the problem?. Development (Cambridge), 2019, 146, .	1.2	31
71	Optical Projection Tomography of Vertebrate Embryo Development. Cold Spring Harbor Protocols, 2011, 2011, pdb.top116.	0.2	27
72	Light sheet fluorescence microscopy for in situ cell interaction analysis in mouse lymph nodes. Journal of Immunological Methods, 2016, 431, 1-10.	0.6	27

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73	3D modelling, gene expression mapping and post-mapping image analysis in the developing human brain. Brain Research Bulletin, 2005, 66, 449-453.	1.4	26
74	On the concept of mechanism in development. , 2014, , 56-78.		26
75	Preparation of Mouse Embryos for Optical Projection Tomography Imaging. Cold Spring Harbor Protocols, 2011, 2011, pdb.prot5639-pdb.prot5639.	0.2	23
76	Topologically selective islet vulnerability and self-sustained downregulation of markers for Î²-cell maturity in streptozotocin-induced diabetes. Communications Biology, 2020, 3, 541.	2.0	22
77	Antigen Availability and DOCK2-Driven Motility Govern CD4+ T Cell Interactions with Dendritic Cells In Vivo. Journal of Immunology, 2017, 199, 520-530.	0.4	21
78	Migratory appendicular muscles precursor cells in the common ancestor to all vertebrates. Nature Ecology and Evolution, 2017, 1, 1731-1736.	3.4	21
79	Attenuation artifacts in light sheet fluorescence microscopy corrected by OPTiSPIM. Light: Science and Applications, 2018, 7, 70.	7.7	21
80	Design principles of stripe-forming motifs: the role of positive feedback. Scientific Reports, 2014, 4, 5003.	1.6	20
81	Intravital imaging of hair-cell development and regeneration in the zebrafish. Frontiers in Neuroanatomy, 2013, 7, 33.	0.9	17
82	Quantitative Measurements in 3-Dimensional Datasets of Mouse Lymph Nodes Resolve Organ-Wide Functional Dependencies. Computational and Mathematical Methods in Medicine, 2012, 2012, 1-8.	0.7	16
83	A quantitative method for staging mouse embryos based on limb morphometry. Development (Cambridge), 2018, 145, .	1.2	16
84	Gene expression analysis of canonical Wnt pathway transcriptional regulators during early morphogenesis of the facial region in the mouse embryo. Gene Expression Patterns, 2009, 9, 296-305.	0.3	14
85	ESCRT-II/Vps25 Constrains Digit Number by Endosome-Mediated Selective Modulation of FGF-SHH Signaling. Cell Reports, 2014, 9, 674-687.	2.9	12
86	Geometric Morphometrics on Gene Expression Patterns Within Phenotypes: A Case Example on Limb Development. Systematic Biology, 2016, 65, 194-211.	2.7	12
87	Endogenous CRISPR/Cas9 arrays for scalable whole-organism lineage tracing. Development (Cambridge), 2020, 147, .	1.2	12
88	Quantification of gene expression patterns to reveal the origins of abnormal morphogenesis. ELife, 2018, 7, .	2.8	12
89	Mechanistic Explanations for Restricted Evolutionary Paths That Emerge from Gene Regulatory Networks. PLoS ONE, 2013, 8, e61178.	1.1	11
90	Toward Controllable Morphogenesis in Large Robot Swarms. IEEE Robotics and Automation Letters, 2019, 4, 3386-3393.	3.3	9

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91	Two ways to use imaging: focusing directly on mechanism, or indirectly via behaviour?. Current Opinion in Genetics and Development, 2011, 21, 523-529.	1.5	6
92	On the Mechanical Interplay Between Intra- and Inter-Synchronization During Collective Cell Migration: A Numerical Investigation. Bulletin of Mathematical Biology, 2013, 75, 2575-2599.	0.9	6
93	Î¼Match: 3D Shape Correspondence for Biological Image Data. Frontiers in Computer Science, 2022, 4, .	1.7	6
94	Transfecting RNA quadruplexes results in few transcriptome perturbations. RNA Biology, 2013, 10, 205-210.	1.5	4
95	Optical Projection Tomography. , 2009, , 199-224.		3
96	Other Organs. , 0, , 311-332.		0
97	Genetics of system biology. Current Opinion in Genetics and Development, 2012, 22, 523-526.	1.5	0
98	Cells unite by trapping a signal. Nature, 2014, 515, 41-42.	13.7	0
99	Novel Techniques for 3D Biological Microscopy. , 2007, , .		0
100	Inâ€silico organogenesis: measuring and modelling vertebrate limb development. FASEB Journal, 2012, 26, 337.3.	0.2	0
101	ya | | a: GPU-powered Spheroid Models for Mesenchyme and Epithelium. SSRN Electronic Journal, 0, , .	0.4	0