

Stuart A Newman

List of Publications by Citations

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136
papers

4,247
citations

37
h-index

63
g-index

153
ext. papers

4,935
ext. citations

4.5
avg, IF

5.85
L-index

#	Paper	IF	Citations
136	Role of transforming growth factor-beta in chondrogenic pattern formation in the embryonic limb: stimulation of mesenchymal condensation and fibronectin gene expression by exogenous TGF-beta and evidence for endogenous TGF-beta-like activity. <i>Developmental Biology</i> , 1991 , 145, 99-109	3.1	208
135	Mechanisms of pattern formation in development and evolution. <i>Development (Cambridge)</i> , 2003 , 130, 2027-37	6.6	202
134	Epigenetic mechanisms of character origination. <i>The Journal of Experimental Zoology</i> , 2000 , 288, 304-17		185
133	Cell elongation is key to in silico replication of in vitro vasculogenesis and subsequent remodeling. <i>Developmental Biology</i> , 2006 , 289, 44-54	3.1	184
132	Biological Physics of the Developing Embryo 2005 ,		182
131	The mechanism of precartilaginous mesenchymal condensation: a major role for interaction of the cell surface with the amino-terminal heparin-binding domain of fibronectin. <i>Developmental Biology</i> , 1989 , 136, 97-103	3.1	134
130	The innovation triad: an EvoDevo agenda. <i>Journal of Experimental Zoology Part B: Molecular and Developmental Evolution</i> , 2005 , 304, 487-503	1.8	125
129	Dynamical patterning modules: a "pattern language" for development and evolution of multicellular form. <i>International Journal of Developmental Biology</i> , 2009 , 53, 693-705	1.9	120
128	Nonuniform distribution of fibronectin during avian limb development. <i>Developmental Biology</i> , 1982 , 90, 118-26	3.1	117
127	Before programs: the physical origination of multicellular forms. <i>International Journal of Developmental Biology</i> , 2006 , 50, 289-99	1.9	113
126	Assembly of collagen matrices as a phase transition revealed by structural and rheologic studies. <i>Biophysical Journal</i> , 2003 , 84, 1272-80	2.9	111
125	Dynamical mechanisms for skeletal pattern formation in the vertebrate limb. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2004 , 271, 1713-22	4.4	109
124	The origins of multicellular organisms. <i>Evolution & Development</i> , 2013 , 15, 41-52	2.6	101
123	A framework for three-dimensional simulation of morphogenesis. <i>IEEE/ACM Transactions on Computational Biology and Bioinformatics</i> , 2005 , 2, 273-88	3	86
122	Phenotypic and dynamical transitions in model genetic networks. II. Application to the evolution of segmentation mechanisms. <i>Evolution & Development</i> , 2001 , 3, 95-103	2.6	86
121	Generic physical mechanisms of tissue morphogenesis: A common basis for development and evolution. <i>Journal of Evolutionary Biology</i> , 1994 , 7, 467-488	2.3	81
120	Morphogenetic differences between fore and hind limb precartilaginous mesenchyme: relation to mechanisms of skeletal pattern formation. <i>Developmental Biology</i> , 1994 , 162, 195-208	3.1	79

119	Ectodermal FGFs induce perinodular inhibition of limb chondrogenesis in vitro and in vivo via FGF receptor 2. <i>Developmental Biology</i> , 2002 , 249, 270-82	3.1	76
118	The distal boundary of myogenic primordia in chimeric avian limb buds and its relation to an accessible population of cartilage progenitor cells. <i>Developmental Biology</i> , 1981 , 84, 440-8	3.1	76
117	Bare bones pattern formation: a core regulatory network in varying geometries reproduces major features of vertebrate limb development and evolution. <i>PLoS ONE</i> , 2010 , 5, e10892	3.7	74
116	Rethinking gene regulatory networks in light of alternative splicing, intrinsically disordered protein domains, and post-translational modifications. <i>Frontiers in Cell and Developmental Biology</i> , 2015 , 3, 8	5.7	71
115	Different roles for fibronectin in the generation of fore and hind limb precartilaginous condensations. <i>Developmental Biology</i> , 1995 , 172, 519-30	3.1	69
114	Dynamical patterning modules: physico-genetic determinants of morphological development and evolution. <i>Physical Biology</i> , 2008 , 5, 015008	3	67
113	Origination and innovation in the vertebrate limb skeleton: an epigenetic perspective. <i>Journal of Experimental Zoology Part B: Molecular and Developmental Evolution</i> , 2005 , 304, 593-609	1.8	66
112	Latex beads as probes of cell surface-extracellular matrix interactions during chondrogenesis: evidence for a role for amino-terminal heparin-binding domain of fibronectin. <i>Developmental Biology</i> , 1989 , 136, 87-96	3.1	64
111	Is segmentation generic?. <i>BioEssays</i> , 1993 , 15, 277-83	4.1	60
110	Physico-genetic determinants in the evolution of development. <i>Science</i> , 2012 , 338, 217-9	33.3	59
109	Activator-inhibitor dynamics of vertebrate limb pattern formation. <i>Birth Defects Research Part C: Embryo Today Reviews</i> , 2007 , 81, 305-19		57
108	The brown adipocyte differentiation pathway in birds: an evolutionary road not taken. <i>BMC Biology</i> , 2008 , 6, 17	7.3	57
107	Interplay between activator-inhibitor coupling and cell-matrix adhesion in a cellular automaton model for chondrogenic patterning. <i>Developmental Biology</i> , 2004 , 271, 372-87	3.1	57
106	A regulatory network of two galectins mediates the earliest steps of avian limb skeletal morphogenesis. <i>BMC Developmental Biology</i> , 2011 , 11, 6	3.1	50
105	Sticky fingers: Hox genes and cell adhesion in vertebrate limb development. <i>BioEssays</i> , 1996 , 18, 171-4	4.1	50
104	Application of Discontinuous Galerkin Methods for Reaction-Diffusion Systems in Developmental Biology. <i>Journal of Scientific Computing</i> , 2009 , 40, 391-418	2.3	49
103	Patterns of mesenchymal condensation in a multiscale, discrete stochastic model. <i>PLoS Computational Biology</i> , 2007 , 3, e76	5	48
102	Multiscale models for vertebrate limb development. <i>Current Topics in Developmental Biology</i> , 2008 , 81, 311-40	5.3	41

101	From Genes to Organisms Via the Cell A Problem-Solving Environment for Multicellular Development. <i>Computing in Science and Engineering</i> , 2007 , 9, 50-60	1.5	40
100	Limb bud and flank mesoderm have distinct "physical phenotypes" that may contribute to limb budding. <i>Developmental Biology</i> , 2008 , 321, 319-30	3.1	37
99	On the stationary state analysis of reaction-diffusion mechanisms for biological pattern formation. <i>Journal of Theoretical Biology</i> , 1988 , 134, 183-97	2.3	37
98	'Biogeneric' developmental processes: drivers of major transitions in animal evolution. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2016 , 371,	5.8	30
97	Animal egg as evolutionary innovation: a solution to the "embryonic hourglass" puzzle. <i>Journal of Experimental Zoology Part B: Molecular and Developmental Evolution</i> , 2011 , 316, 467-83	1.8	30
96	Developmental mechanisms: putting genes in their place. <i>Journal of Biosciences</i> , 2002 , 27, 97-104	2.3	29
95	Dynamical patterning modules in plant development and evolution. <i>International Journal of Developmental Biology</i> , 2012 , 56, 661-74	1.9	28
94	Gene loss, thermogenesis, and the origin of birds. <i>Annals of the New York Academy of Sciences</i> , 2013 , 1289, 36-47	6.5	28
93	Modeling the morphodynamic galectin patterning network of the developing avian limb skeleton. <i>Journal of Theoretical Biology</i> , 2014 , 346, 86-108	2.3	27
92	Wetting, percolation and morphogenesis in a model tissue system. <i>Journal of Theoretical Biology</i> , 1989 , 140, 417-30	2.3	27
91	Cell state switching factors and dynamical patterning modules: complementary mediators of plasticity in development and evolution. <i>Journal of Biosciences</i> , 2009 , 34, 553-72	2.3	25
90	The Developmental Genetic Toolkit and the Molecular Homology Analogy Paradox. <i>Biological Theory</i> , 2006 , 1, 12-16	1.7	25
89	The morphostatic limit for a model of skeletal pattern formation in the vertebrate limb. <i>Bulletin of Mathematical Biology</i> , 2008 , 70, 460-83	2.1	23
88	Stability of n-dimensional patterns in a generalized Turing system: implications for biological pattern formation. <i>Nonlinearity</i> , 2005 , 18, 125-138	1.7	23
87	Phase transformations in a model mesenchymal tissue. <i>Physical Biology</i> , 2004 , 1, 100-9	3	22
86	Nuclear localization of type II cAMP-dependent protein kinase during limb cartilage differentiation is associated with a novel developmentally regulated A-kinase anchoring protein. <i>Developmental Biology</i> , 1996 , 176, 51-61	3.1	22
85	The pre-Mendelian, pre-Darwinian world: shifting relations between genetic and epigenetic mechanisms in early multicellular evolution. <i>Journal of Biosciences</i> , 2005 , 30, 75-85	2.3	21
84	The vertebrate limb: An evolving complex of self-organizing systems. <i>Progress in Biophysics and Molecular Biology</i> , 2018 , 137, 12-24	4.7	19

83	Sleeper cells: the stringent response and persistence in the <i>Borrelia</i> (<i>Borrelia</i>) burgdorferi enzootic cycle. <i>Environmental Microbiology</i> , 2017 , 19, 3846-3862	5.2	19
82	Dynamical Patterning Modules, Biogenic Materials, and the Evolution of Multicellular Plants. <i>Frontiers in Plant Science</i> , 2018 , 9, 871	6.2	19
81	Mathematical modeling of vertebrate limb development. <i>Mathematical Biosciences</i> , 2013 , 243, 1-17	3.9	18
80	Phase transitions, interfaces, and morphogenesis in a network of protein fibers. <i>International Review of Cytology</i> , 1994 , 150, 139-48		18
79	Generation, integration, autonomy: three steps in the evolution of homology. <i>Novartis Foundation Symposium</i> , 1999 , 222, 65-73; discussion 73-9		18
78	The evolutionary origin of digit patterning. <i>EvoDevo</i> , 2017 , 8, 21	3.2	17
77	Reaction-diffusion systems and external morphogen gradients: the two-dimensional case, with an application to skeletal pattern formation. <i>Bulletin of Mathematical Biology</i> , 2012 , 74, 666-87	2.1	16
76	Nuclear events during early chondrogenesis: phosphorylation of the precartilaginous 35.5-kDa domain-specific chromatin protein and its regulation by cyclic AMP. <i>Developmental Biology</i> , 1987 , 120, 92-100	3.1	16
75	Physical Determinants in the Emergence and Inheritance of Multicellular Form. <i>Biological Theory</i> , 2013 , 8, 274-285	1.7	13
74	Inherency of Form and Function in Animal Development and Evolution. <i>Frontiers in Physiology</i> , 2019 , 10, 702	4.6	12
73	Thermogenesis, muscle hyperplasia, and the origin of birds. <i>BioEssays</i> , 2011 , 33, 653-6	4.1	12
72	Deep phylogenomics of a tandem-repeat galectin regulating appendicular skeletal pattern formation. <i>BMC Evolutionary Biology</i> , 2016 , 16, 162	3	12
71	Dynamical Patterning Modules 2010 , 281-306		11
70	Epigenetic Mechanisms of Character Origination 2001 , 559-579		11
69	Cell differentiation: What have we learned in 50 years?. <i>Journal of Theoretical Biology</i> , 2020 , 485, 110031-3		11
68	Synchronization of Hes1 oscillations coordinates and refines condensation formation and patterning of the avian limb skeleton. <i>Mechanisms of Development</i> , 2019 , 156, 41-54	1.7	10
67	Form and function remixed: developmental physiology in the evolution of vertebrate body plans. <i>Journal of Physiology</i> , 2014 , 592, 2403-12	3.9	10
66	Genes and Form 2006 , 38-73		10

65	Physico-genetics of morphogenesis: the hybrid nature of developmental mechanisms 2014 , 95-113		10
64	Generic physical mechanisms of morphogenesis and pattern formation as determinants in the evolution of multicellular organization. <i>Journal of Biosciences</i> , 1992 , 17, 193-215	2.3	9
63	Lamarck's Dangerous Idea 2011 , 157-170		9
62	E.E. Just's "independent irritability" revisited: the activated egg as excitable soft matter. <i>Molecular Reproduction and Development</i> , 2009 , 76, 966-74	2.6	8
61	The Turing mechanism in vertebrate limb patterning. <i>Nature Reviews Molecular Cell Biology</i> , 2007 , 8, 1-1	48.7	8
60	Complexity and Self-Organization in Biological Development and Evolution 2005 , 49-95		8
59	Does resource availability help determine the evolutionary route to multicellularity?. <i>Evolution & Development</i> , 2019 , 21, 115-119	2.6	7
58	Inherency and homomorphy in the evolution of development. <i>Current Opinion in Genetics and Development</i> , 2019 , 57, 1-8	4.9	7
57	Perspectives on Integrating Genetic and Physical Explanations of Evolution and Development: An Introduction to the Symposium. <i>Integrative and Comparative Biology</i> , 2017 , 57, 1258-1268	2.8	7
56	Ernest Everett Just: Egg and embryo as excitable systems. <i>Journal of Experimental Zoology Part B: Molecular and Developmental Evolution</i> , 2014 , 322, 191-201	1.8	7
55	The many roads to and from multicellularity. <i>Journal of Experimental Botany</i> , 2020 , 71, 3247-3253	7	7
54	Inherent forms and the evolution of evolution. <i>Journal of Experimental Zoology Part B: Molecular and Developmental Evolution</i> , 2019 , 332, 331-338	1.8	6
53	Structural divergence in vertebrate phylogeny of a duplicated prototype galectin. <i>Genome Biology and Evolution</i> , 2014 , 6, 2721-30	3.9	6
52	Genes and proteins: dogmas in decline. <i>Journal of Biosciences</i> , 2007 , 32, 1041-3	2.3	6
51	MULTISCALE AGENT-BASED SIMULATION FOR CHONDROGENIC PATTERN FORMATION IN VITRO. <i>Cybernetics and Systems</i> , 2007 , 38, 707-727	1.9	6
50	Inherency 2018 , 1-12		6
49	Polarity, planes of cell division, and the evolution of plant multicellularity. <i>Protoplasma</i> , 2019 , 256, 585-599		6
48	BIOLOGICAL LATTICE GAS MODELS. <i>World Scientific Series on Nonlinear Science, Series B</i> , 2004 , 274-291	0.3	5

47	Interplay of mesoscale physics and agent-like behaviors in the parallel evolution of aggregative multicellularity. <i>EvoDevo</i> , 2020 , 11, 21	3.2	5
46	Multiscale modeling of vertebrate limb development. <i>Wiley Interdisciplinary Reviews: Systems Biology and Medicine</i> , 2020 , 12, e1485	6.6	4
45	Limb, tooth, beak: three modes of development and evolutionary innovation of form. <i>Journal of Biosciences</i> , 2014 , 39, 211-23	2.3	4
44	Morphological Evolution: Epigenetic Mechanisms 2010 ,		4
43	Genetically Modified Foods and the Attack on Nature. <i>Capitalism, Nature, Socialism</i> , 2009 , 20, 22-31	1.3	4
42	Snakes and ladders: the ups and downs of animal segmentation. <i>Journal of Biosciences</i> , 2009 , 34, 163-6	2.3	4
41	Why are there eggs?. <i>Biochemical and Biophysical Research Communications</i> , 2014 , 450, 1225-30	3.4	3
40	The Demise of the Gene. <i>Capitalism, Nature, Socialism</i> , 2013 , 24, 62-72	1.3	3
39	Synthetic Biology: Life as App Store. <i>Capitalism, Nature, Socialism</i> , 2012 , 23, 6-18	1.3	3
38	Complexity in Organismal Evolution 2011 , 335-354		2
37	The Transhumanism Bubble. <i>Capitalism, Nature, Socialism</i> , 2010 , 21, 29-42	1.3	2
36	Phenotypic and developmental plasticity. <i>Journal of Biosciences</i> , 2009 , 34, 493-4	2.3	2
35	Evolution: The Public's Problem, and the Scientists. <i>Capitalism, Nature, Socialism</i> , 2008 , 19, 98-106	1.3	2
34	cDNA cloning and spatiotemporal expression during avian embryogenesis of hnRNP A1, a regulatory factor in alternative splicing. <i>Gene Expression Patterns</i> , 2003 , 3, 285-95	1.5	2
33	Morphological Evolution: Epigenetic Mechanisms 2001 ,		2
32	John Tyler Bonner: Remembering a scientific pioneer. <i>Journal of Experimental Zoology Part B: Molecular and Developmental Evolution</i> , 2019 , 332, 365-370	1.8	2
31	The evolution of pattern in the vertebrate limb. <i>BioEssays</i> , 2002 , 24, 1077-8	4.1	1
30	Cleavage and blastula formation 2005 , 24-50		1

29	The Scientific Selling of rDNA. <i>Environment</i> , 1982 , 24, 21-57	2.8	1
28	Inherency 2021 , 121-132		1
27	<i>Borrelia burgdorferi</i> Antimicrobial-Tolerant Persistence in Lyme Disease and Posttreatment Lyme Disease Syndromes.. <i>MBio</i> , 2022 , e0344021	7.8	1
26	Self-Organization in Embryonic Development: Myth and Reality. <i>Evolutionary Biology</i> , 2022 , 195-222	0.3	1
25	Remembering Richard Lewontin (1929-2021). <i>Biological Theory</i> , 2021 , 16, 257	1.7	0
24	Spatial waves and temporal oscillations in vertebrate limb development. <i>BioSystems</i> , 2021 , 208, 104502	1.9	0
23	Development and Evolution: The Physics Connection. <i>Boston Studies in the Philosophy and History of Science</i> , 2015 , 421-440	0.2	
22	Introduction: e pluribus unum. <i>Journal of Biosciences</i> , 2014 , 39, 171-6	2.3	
21	Cloning our way to "the next level". <i>Nature Biotechnology</i> , 1997 , 15, 488	44.5	
20	Dialectical EvoDevo. <i>Biological Theory</i> , 2006 , 1, 339-340	1.7	
19	Interplay between activator-inhibitor coupling and cell-matrix adhesion in a cellular automaton model for chondrogenic patterning. <i>Developmental Biology</i> , 2004 , 271, 372-372	3.1	
18	Stephen Jay Gould. <i>Journal of Biosciences</i> , 2002 , 27, 448-449	2.3	
17	The cell: fundamental unit of developmental systems 2005 , 6-23		
16	Fertilization: generating one living dynamical system from two 2005 , 223-247		
15	Cell states: stability, oscillation, differentiation 2005 , 51-76		
14	Pattern formation: segmentation, axes, and asymmetry 2005 , 155-187		
13	Evolution of developmental mechanisms 2005 , 248-272		
12	Introduction: Biology and physics 2005 , 1-5		

- 11 Cell adhesion, compartmentalization, and lumen formation **2005**, 77-98
- 10 Epithelial morphogenesis: gastrulation and neurulation **2005**, 99-130
- 9 Mesenchymal morphogenesis **2005**, 131-154
- 8 Organogenesis **2005**, 188-222
- 7 Tumour virus DNA: hazards no longer speculative. *Nature*, **1979**, 281, 176 50.4
- 6 Agent-Based Model for Developmental Pattern Formation with Multiscale Dynamics and Varying Cell Geometry **2007**, 149-161
- 5 John Tyler Bonner (1920-2019) **2020**, 1-14
- 4 Human cloning. *Science*, **1998**, 282, 1824-5 33.3
- 3 Cell state switching factors and dynamical patterning modules: complementary mediators of plasticity in development and evolution. *Journal of Biosciences*, **2009**, 34, 553 2.3
- 2 The evolution of cell differentiation in animals: biomolecular condensates as amplification hubs of inherent cell functions **2020**, 253-279
- 1 John Tyler Bonner (1920-2019) **2021**, 315-328