Eric D Siggia

List of Publications by Year
in descending order

139 papers	27,309 citations	13068 68 h-index	12233 133 g-index
148 all docs	148 docs citations	148 times ranked	20298 citing authors

#	Article	IF	Citations
1	Statistically derived geometrical landscapes capture principles of decision-making dynamics during cell fate transitions. Cell Systems, 2022, 13, 12-28.e3.	2.9	66
2	Mechanical regulation of early vertebrate embryogenesis. Nature Reviews Molecular Cell Biology, 2022, 23, 169-184.	16.1	44
3	InÂvitro attachment and symmetry breaking of a human embryo model assembled from primed embryonic stem cells. Cell Stem Cell, 2022, 29, 962-972.e4.	5.2	27
4	Mechanisms underlying WNT-mediated priming of human embryonic stem cells. Development (Cambridge), 2022, 149, .	1.2	8
5	Differential compartmentalization of BMP4/NOGGIN requires NOGGIN trans-epithelial transport. Developmental Cell, 2021, 56, 1930-1944.e5.	3.1	11
6	Geometry of gene regulatory dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	46
7	Human neural tube morphogenesis in vitro by geometric constraints. Nature, 2021, 599, 268-272.	13.7	107
8	InÂvitro modeling of early mammalian embryogenesis. Current Opinion in Biomedical Engineering, 2020, 13, 134-143.	1.8	13
9	A 3D model of a human epiblast reveals BMP4-driven symmetry breaking. Nature Cell Biology, 2019, 21, 900-910.	4.6	128
10	Mapping cell migrations and fates in a gastruloid model to the human primitive streak. Development (Cambridge), 2019, 146, .	1.2	32
11	Self-organization of stem cells into embryos: A window on early mammalian development. Science, 2019, 364, 948-951.	6.0	145
12	A wave of WNT signalling balanced by secreted inhibitors controls primitive streak formation in micropattern colonies of human embryonic stem cells. Development (Cambridge), 2019, 146, .	1.2	89
13	Micropattern differentiation of mouse pluripotent stem cells recapitulates embryo regionalized cell fate patterning. ELife, 2018, 7, .	2.8	144
14	Modeling Mammalian Gastrulation With Embryonic Stem Cells. Current Topics in Developmental Biology, 2018, 129, 1-23.	1.0	23
15	WNT signaling memory is required for ACTIVIN to function as a morphogen in human gastruloids. ELife, 2018, 7, .	2.8	64
16	A Geometric Model of Stripe Refinement. Developmental Cell, 2017, 41, 225-227.	3.1	0
17	Long-Term High-Resolution Imaging of Developing C.Âelegans Larvae with Microfluidics. Developmental Cell, 2017, 40, 202-214.	3.1	75
18	Gene-free methodology for cell fate dynamics during development. ELife, 2017, 6, .	2.8	36

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19	Self-organization of the in vitro attached human embryo. Nature, 2016, 533, 251-254.	13.7	538
20	Small-scale anisotropy in turbulent boundary layers. Journal of Fluid Mechanics, 2016, 804, 5-23.	1.4	22
21	A Balance between Secreted Inhibitors and Edge Sensing Controls Gastruloid Self-Organization. Developmental Cell, 2016, 39, 302-315.	3.1	286
22	Self-organization of human embryonic stem cells on micropatterns. Nature Protocols, 2016, 11, 2223-2232.	5.5	119
23	Predicting Ancestral Segmentation Phenotypes from Drosophila to Anopheles Using In Silico Evolution. PLoS Genetics, 2016, 12, e1006052.	1.5	15
24	Temperature compensation and temperature sensation in the circadian clock. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E6284-92.	3.3	84
25	Comment on â€œControlling long-term signaling: Receptor dynamics determine attenuation and refractory behavior of the TGF-Î² pathwayâ€â€"Smad2/3 activity does not predict the dynamics of transcription. Science Signaling, 2014, 7, lc1.	1.6	0
26	Encoding of Temporal Signals by the TGF-Î² Pathway and Implications for Embryonic Patterning. Developmental Cell, 2014, 30, 334-342.	3.1	101
27	A method to recapitulate early embryonic spatial patterning in human embryonic stem cells. Nature Methods, 2014, 11, 847-854.	9.0	680
28	Phenotypic model for early T-cell activation displaying sensitivity, specificity, and antagonism. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E888-97.	3.3	101
29	Decisions on the fly in cellular sensory systems. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E3704-12.	3.3	57
30	Adaptive Temperature Compensation in Circadian Oscillations. PLoS Computational Biology, 2012, 8, e1002585.	1.5	43
31	Signaling dynamics and embryonic development. Cell Cycle, 2012, 11, 3529-3530.	1.3	3
32	Dynamics of TGF-Î² signaling reveal adaptive and pulsatile behaviors reflected in the nuclear localization of transcription factor Smad4. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E1947-56.	3.3	89
33	Phenotypic models of evolution and development: geometry as destiny. Current Opinion in Genetics and Development, 2012, 22, 627-633.	1.5	31
34	Origin of Irreversibility of Cell Cycle Start in Budding Yeast. PLoS Biology, 2010, 8, e1000284.	2.6	100
35	Nucleosome-Depleted Regions in Cell-Cycle-Regulated Promoters Ensure Reliable Gene Expression in Every Cell Cycle. Developmental Cell, 2010, 18, 544-555.	3.1	83
36	Using DNA mechanics to predict in vitro nucleosome positions and formation energies. Nucleic Acids Research, 2009, 37, 4707-4722.	6.5	172

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37	Analysis of combinatorial cis-regulation in synthetic and genomic promoters. Nature, 2009, 457, 215-218.	13.7	287
38	Nucleosome Depleted Region In Promoter Improves Robustness In Gene Expression. Biophysical Journal, 2009, 96, 567a.	0.2	0
39	Positive feedback of G1 cyclins ensures coherent cell cycle entry. Nature, 2008, 454, 291-296.	13.7	325
40	A case study of evolutionary computation of biochemical adaptation. Physical Biology, 2008, 5, 026009.	0.8	66
41	Developmental regulatory bits. Molecular Systems Biology, 2008, 4, 226.	3.2	1
42	A Microfluidic Device for Temporally Controlled Gene Expression and Long-Term Fluorescent Imaging in Unperturbed Dividing Yeast Cells. PLoS ONE, 2008, 3, e1468.	1.1	122
43	Connecting protein structure with predictions of regulatory sites. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 7068-7073.	3.3	60
44	Tracking the in vivo evolution of multidrug resistance in Staphylococcus aureus by whole-genome sequencing. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 9451-9456.	3.3	557
45	Deriving structure from evolution: metazoan segmentation. Molecular Systems Biology, 2007, 3, 154.	3.2	98
46	The effects of molecular noise and size control on variability in the budding yeast cell cycle. Nature, 2007, 448, 947-951.	13.7	440
47	Coherence and Timing of Cell Cycle Start Examined at Single-Cell Resolution. Molecular Cell, 2006, 21, 3-14.	4.5	125
48	Gene Expression From Random Libraries of Yeast Promoters. Genetics, 2006, 172, 2113-2122.	1.2	26
49	Sequence Turnover and Tandem Repeats in cis-Regulatory Modules in Drosophila. Molecular Biology and Evolution, 2005, 22, 874-885.	3.5	41
50	PhyloGibbs: A Gibbs Sampling Motif Finder That Incorporates Phylogeny. PLoS Computational Biology, 2005, 1, e67.	1.5	236
51	Protein-DNA binding specificity predictions with structural models. Nucleic Acids Research, 2005, 33, 5781-5798.	6.5	167
52	High Functional Overlap Between MluI Cell-Cycle Box Binding Factor and Swi4/6 Cell-Cycle Box Binding Factor in the G1/S Transcriptional Program in Saccharomyces cerevisiae. Genetics, 2005, 171, 49-61.	1.2	100
53	Computational methods for transcriptional regulation. Current Opinion in Genetics and Development, 2005, 15, 214-221.	1.5	58
54	Shake It, Donâ€™t Break It: Positive Feedback and the Evolution of Oscillator Design. Developmental Cell, 2005, 9, 309-310.	3.1	12

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55	Decoding the Genome. Annales Henri Poincare, 2003, 4, 663-666.	0.8	0
56	Identification of the binding sites of regulatory proteins in bacterial genomes. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 11772-11777.	3.3	78
57	Probabilistic clustering of sequences: Inferring new bacterial regulons by comparative genomics. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 7323-7328.	3.3	57
58	Intrinsic and extrinsic contributions to stochasticity in gene expression. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 12795-12800.	3.3	1,444
59	Stochastic Gene Expression in a Single Cell. Science, 2002, 297, 1183-1186.	6.0	4,817
60	The Role of Proofreading in Signal Transduction Specificity. Biophysical Journal, 2002, 82, 2928-2933.	0.2	76
61	Dissection of COPI and Arf1 dynamics in vivo and role in Golgi membrane transport. Nature, 2002, 417, 187-193.	13.7	239
62	Regulatory element detection using correlation with expression. Nature Genetics, 2001, 27, 167-171.	9.4	648
63	Scalar turbulence. Nature, 2000, 405, 639-646.	13.7	639
64	Diffusion in Inhomogeneous Media: Theory and Simulations Applied to Whole Cell Photobleach Recovery. Biophysical Journal, 2000, 79, 1761-1770.	0.2	121
65	Dynamics and retention of misfolded proteins in native ER membranes. Nature Cell Biology, 2000, 2, 288-295.	4.6	251
66	Turbulent mixing of a passive scalar. Physica A: Statistical Mechanics and Its Applications, 1999, 263, 95-103.	1.2	3
67	Golgi Membranes Are Absorbed into and Reemerge from the ER during Mitosis. Cell, 1999, 99, 589-601.	13.5	315
68	Kinetic Analysis of Secretory Protein Traffic and Characterization of Golgi to Plasma Membrane Transport Intermediates in Living Cells. Journal of Cell Biology, 1998, 143, 1485-1503.	2.3	569
69	Structures and Multipoint Correlators for Turbulent Advection: Predictions and Experiments. Physical Review Letters, 1998, 81, 4373-4376.	2.9	39
70	Anomalous scaling for a passive scalar near the Batchelor limit. Physical Review E, 1998, 57, 2965-2977.	0.8	23
71	Perturbation theory for the Î³-correlated model of passive scalar advection near the Batchelor limit. Physical Review E, 1997, 55, R1263-R1266.	0.8	53
72	Golgi Tubule Traffic and the Effects of Brefeldin A Visualized in Living Cells. Journal of Cell Biology, 1997, 139, 1137-1155.	2.3	461

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73	Nuclear Membrane Dynamics and Reassembly in Living Cells: Targeting of an Inner Nuclear Membrane Protein in Interphase and Mitosis. Journal of Cell Biology, 1997, 138, 1193-1206.	2.3	738
74	High Rayleigh number convection and passive scalar mixing. Physica D: Nonlinear Phenomena, 1996, 97, 286-290.	1.3	5
75	Symmetry and Scaling of Turbulent Mixing. Physical Review Letters, 1996, 77, 2463-2466.	2.9	71
76	Stretching DNA. Macromolecules, 1995, 28, 8759-8770.	2.2	2,187
77	Lagrangian path integrals and fluctuations in random flow. Physical Review E, 1994, 49, 2912-2927.	0.8	180
78	Skewed, exponential pressure distributions from Gaussian velocities. Physics of Fluids A, Fluid Dynamics, 1993, 5, 2525-2532.	1.6	42
79	Vortex morphology and Kelvin's theorem. Physical Review A, 1992, 45, R5351-R5354.	1.0	29
80	Finite-time singularities in the axisymmetric three-dimension Euler equations. Physical Review Letters, 1992, 68, 1511-1514.	2.9	50
81	Excitation spectrum of the spiral state of a doped antiferromagnet. Physical Review B, 1992, 46, 8305-8311.	1.1	43
82	Development of singular solutions to the axisymmetric Euler equations. Physics of Fluids A, Fluid Dynamics, 1992, 4, 1472-1491.	1.6	82
83	Singular solutions to the 3D axisymmetric incompressible Euler equations. Physica D: Nonlinear Phenomena, 1992, 61, 240-245.	1.3	0
84	On the interface dynamics for convention in porous media. Physica D: Nonlinear Phenomena, 1992, 57, 311-329.	1.3	8
85	Turbulent Premixed Flames and Sound Generation. Combustion Science and Technology, 1991, 78, 147-155.	1.2	97
86	Exponential tails and random advection. Physical Review Letters, 1991, 66, 2984-2987.	2.9	110
87	Collapsing solutions to the 3-D Euler equations. Physics of Fluids A, Fluid Dynamics, 1990, 2, 220-241.	1.6	129
88	Mobile vacancy in a quantum antiferromagnet: Effective Hamiltonian. Physical Review B, 1990, 42, 2485-2500.	1.1	85
89	Ground state of a mobile vacancy in a quantum antiferromagnet: Small-cluster study. Physical Review B, 1990, 41, 6715-6723.	1.1	68
90	Heat transport in high-Rayleigh-number convection. Physical Review A, 1990, 42, 3650-3653.	1.0	394

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91	Mean-field theory for vacancies in a quantum antiferromagnet. Physical Review B, 1989, 40, 9162-9166.	1.1	62
92	Ground-state properties of the two-dimensional antiferromagnetic Heisenberg model. Physical Review B, 1989, 39, 2484-2493.	1.1	109
93	Spiral phase of a doped quantum antiferromagnet. Physical Review Letters, 1989, 62, 1564-1567.	2.9	385
94	Spin-wave velocity and susceptibility for the two-dimensional Heisenberg antiferromagnet. Physical Review B, 1989, 40, 11328-11330.	1.1	40
95	Painlevé property and geometry. Physica D: Nonlinear Phenomena, 1989, 34, 303-346.	1.3	22
96	Two-particle excitations in antiferromagnetic insulators. Physical Review Letters, 1988, 60, 740-743.	2.9	287
97	Mobile Vacancies in a Quantum Heisenberg Antiferromagnet. Physical Review Letters, 1988, 61, 467-470.	2.9	383
98	A rapidly convergent method for the inversion of separable, positive, self-adjoint discrete elliptic operators in three or more dimensions. Journal of Computational Physics, 1987, 72, 498-500.	1.9	1
99	Vortex dynamics and the existence of solutions to the Navier–Stokes equations. Physics of Fluids, 1987, 30, 1606.	1.4	82
100	Topological constraints on quasicrystal transformations. Physical Review B, 1986, 34, 3649-3669.	1.1	68
101	Painlevé property and integrability. Physics Letters, Section A: General, Atomic and Solid State Physics, 1986, 119, 112-116.	0.9	24
102	Collapse and amplification of a vortex filament. Physics of Fluids, 1985, 28, 794.	1.4	146
103	Comment on dynamical theories of the liquid-glass transition. Physical Review A, 1985, 32, 3135-3138.	1.0	22
104	Incipient singularities in the Navier-Stokes equations. Physical Review Letters, 1985, 55, 1749-1752.	2.9	51
105	The strong coupling limit of K.A.M. theory and the onset of turbulence. Physics Reports, 1984, 103, 87-94.	10.3	1
106	Universal transition in a dynamical system forced at two incommensurate frequencies. Physica D: Nonlinear Phenomena, 1984, 11, 193-211.	1.3	13
107	Universal properties of the transition from quasi-periodicity to chaos in dissipative systems. Physica D: Nonlinear Phenomena, 1983, 8, 303-342.	1.3	242
108	Onset of turbulent convection in large cells. Physica A: Statistical Mechanics and Its Applications, 1983, 118, 335.	1.2	0

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109	One-Dimensional SchrÃ¶dinger Equation with an Almost Periodic Potential. Physical Review Letters, 1983, 50, 1873-1876.	2.9	651
110	Stability of finite-amplitude convection. Physics of Fluids, 1983, 26, 2905.	1.4	95
111	Surface magnetic relaxation rates in spin-polarized hydrogen. Physical Review B, 1982, 25, 6031-6034.	1.1	15
112	Disappearance of stable convection between free-slip boundaries. Physical Review A, 1982, 26, 1788-1790.	1.0	42
113	Universal Transition from Quasiperiodicity to Chaos in Dissipative Systems. Physical Review Letters, 1982, 49, 132-135.	2.9	230
114	The density distribution of a weakly interacting bose gas in an external potential. Journal of Low Temperature Physics, 1982, 46, 137-149.	0.6	114
115	Evolution and breakdown of a vortex street in two dimensions. Journal of Fluid Mechanics, 1981, 109, 435-463.	1.4	76
116	Numerical study of small-scale intermittency in three-dimensional turbulence. Journal of Fluid Mechanics, 1981, 107, 375.	1.4	455
117	Point-vortex simulation of the inverse energy cascade in two-dimensional turbulence. Physics of Fluids, 1981, 24, 171.	1.4	54
118	Pattern Selection in Rayleigh-BÃ©nard Convection near Threshold. Physical Review Letters, 1981, 47, 835-838.	2.9	199
119	Dynamics of defects in Rayleigh-BÃ©nard convection. Physical Review A, 1981, 24, 1036-1049.	1.0	128
120	Invariants for the one-point vorticity and strain rate correlation functions. Physics of Fluids, 1981, 24, 1934.	1.4	52
121	Hydrodynamics of the condensed phases of spin-polarized atomic hydrogen. Physical Review B, 1981, 23, 3580-3583.	1.1	24
122	Fluctuations about hydrodynamic nonequilibrium steady states. Physics Letters, Section A: General, Atomic and Solid State Physics, 1980, 76, 57-60.	0.9	54
123	Dynamics of superfluid films. Physical Review B, 1980, 21, 1806-1826.	1.1	553
124	Vortex dynamics of the two-dimensional turbulent shear layer. Journal of Fluid Mechanics, 1980, 100, 705-737.	1.4	91
125	SCALIAG AND STRUCTURES IN FULLY TURBUI-ENT FLOWS. Annals of the New York Academy of Sciences, 1980, 357, 368-376.	1.8	2
126	Bose Condensation in Spin-Polarized Atomic Hydrogen. Physical Review Letters, 1980, 44, 1423-1426.	2.9	65

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127	Late stages of spinodal decomposition in binary mixtures. Physical Review A, 1979, 20, 595-605.	1.0	1,141
128	Cascade model of fully developed turbulence. Journal of Statistical Physics, 1978, 19, 543-552.	0.5	31
129	Intermittency effects in a numerical simulation of stationary three-dimensional turbulence. Journal of Fluid Mechanics, 1978, 86, 567-592.	1.4	74
130	Dissipation in Two-Dimensional Superfluids. Physical Review Letters, 1978, 40, 783-786.	2.9	265
131	Model of intermittency in three-dimensional turbulence. Physical Review A, 1978, 17, 1166-1176.	1.0	47
132	Critical dynamics of dilute $He3$-$He4$ mixtures. Physical Review B, 1977, 15, 2830-2834.	1.1	30
133	Origin of intermittency in fully developed turbulence. Physical Review A, 1977, 15, 1730-1750.	1.0	56
134	Pseudospin formulation of kinetic Ising models. Physical Review B, 1977, 16, 2319-2320.	1.1	56
135	Tricritical dynamics near four dimensions. Physical Review B, 1977, 15, 1427-1444.	1.1	67
136	Critical dynamics of helium below Tc. Physical Review B, 1976, 13, 3218-3221.	1.1	31
137	Critical dynamics of kinetic Ising models in four dimensions. Physical Review B, 1975, 11, 4736-4736.	1.1	12
138	kâ†'Â·pâ†'perturbation theory in semiconductor alloys. Physical Review B, 1974, 10, 5147-5158.	1.1	34
139	Properties of Electrons in Semiconductor Inversion Layers with Many Occupied Electric Subbands. I. Screening and Impurity Scattering. Physical Review B, 1970, 2, 1024-1036.	1.1	157