

# Eric D Siggia

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/1188378/publications.pdf>

Version: 2024-02-01

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	Stochastic Gene Expression in a Single Cell. <i>Science</i> , 2002, 297, 1183-1186.	6.0	4,817
2	Stretching DNA. <i>Macromolecules</i> , 1995, 28, 8759-8770.	2.2	2,187
3	Intrinsic and extrinsic contributions to stochasticity in gene expression. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 12795-12800.	3.3	1,444
4	Late stages of spinodal decomposition in binary mixtures. <i>Physical Review A</i> , 1979, 20, 595-605.	1.0	1,141
5	Nuclear Membrane Dynamics and Reassembly in Living Cells: Targeting of an Inner Nuclear Membrane Protein in Interphase and Mitosis. <i>Journal of Cell Biology</i> , 1997, 138, 1193-1206.	2.3	738
6	A method to recapitulate early embryonic spatial patterning in human embryonic stem cells. <i>Nature Methods</i> , 2014, 11, 847-854.	9.0	680
7	One-Dimensional Schrödinger Equation with an Almost Periodic Potential. <i>Physical Review Letters</i> , 1983, 50, 1873-1876.	2.9	651
8	Regulatory element detection using correlation with expression. <i>Nature Genetics</i> , 2001, 27, 167-171.	9.4	648
9	Scalar turbulence. <i>Nature</i> , 2000, 405, 639-646.	13.7	639
10	Kinetic Analysis of Secretory Protein Traffic and Characterization of Golgi to Plasma Membrane Transport Intermediates in Living Cells. <i>Journal of Cell Biology</i> , 1998, 143, 1485-1503.	2.3	569
11	Tracking the in vivo evolution of multidrug resistance in <i>Staphylococcus aureus</i> by whole-genome sequencing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 9451-9456.	3.3	557
12	Dynamics of superfluid films. <i>Physical Review B</i> , 1980, 21, 1806-1826.	1.1	553
13	Self-organization of the in vitro attached human embryo. <i>Nature</i> , 2016, 533, 251-254.	13.7	538
14	Golgi Tubule Traffic and the Effects of Brefeldin A Visualized in Living Cells. <i>Journal of Cell Biology</i> , 1997, 139, 1137-1155.	2.3	461
15	Numerical study of small-scale intermittency in three-dimensional turbulence. <i>Journal of Fluid Mechanics</i> , 1981, 107, 375.	1.4	455
16	The effects of molecular noise and size control on variability in the budding yeast cell cycle. <i>Nature</i> , 2007, 448, 947-951.	13.7	440
17	Heat transport in high-Rayleigh-number convection. <i>Physical Review A</i> , 1990, 42, 3650-3653.	1.0	394
18	Spiral phase of a doped quantum antiferromagnet. <i>Physical Review Letters</i> , 1989, 62, 1564-1567.	2.9	385

#	ARTICLE	IF	CITATIONS
19	Mobile Vacancies in a Quantum Heisenberg Antiferromagnet. <i>Physical Review Letters</i> , 1988, 61, 467-470.	2.9	383
20	Positive feedback of G1 cyclins ensures coherent cell cycle entry. <i>Nature</i> , 2008, 454, 291-296.	13.7	325
21	Golgi Membranes Are Absorbed into and Reemerge from the ER during Mitosis. <i>Cell</i> , 1999, 99, 589-601.	13.5	315
22	Two-particle excitations in antiferromagnetic insulators. <i>Physical Review Letters</i> , 1988, 60, 740-743.	2.9	287
23	Analysis of combinatorial cis-regulation in synthetic and genomic promoters. <i>Nature</i> , 2009, 457, 215-218.	13.7	287
24	A Balance between Secreted Inhibitors and Edge Sensing Controls Gastruloid Self-Organization. <i>Developmental Cell</i> , 2016, 39, 302-315.	3.1	286
25	Dissipation in Two-Dimensional Superfluids. <i>Physical Review Letters</i> , 1978, 40, 783-786.	2.9	265
26	Dynamics and retention of misfolded proteins in native ER membranes. <i>Nature Cell Biology</i> , 2000, 2, 288-295.	4.6	251
27	Universal properties of the transition from quasi-periodicity to chaos in dissipative systems. <i>Physica D: Nonlinear Phenomena</i> , 1983, 8, 303-342.	1.3	242
28	Dissection of COPI and Arf1 dynamics in vivo and role in Golgi membrane transport. <i>Nature</i> , 2002, 417, 187-193.	13.7	239
29	PhyloGibbs: A Gibbs Sampling Motif Finder That Incorporates Phylogeny. <i>PLoS Computational Biology</i> , 2005, 1, e67.	1.5	236
30	Universal Transition from Quasiperiodicity to Chaos in Dissipative Systems. <i>Physical Review Letters</i> , 1982, 49, 132-135.	2.9	230
31	Pattern Selection in Rayleigh-Bénard Convection near Threshold. <i>Physical Review Letters</i> , 1981, 47, 835-838.	2.9	199
32	Lagrangian path integrals and fluctuations in random flow. <i>Physical Review E</i> , 1994, 49, 2912-2927.	0.8	180
33	Using DNA mechanics to predict in vitro nucleosome positions and formation energies. <i>Nucleic Acids Research</i> , 2009, 37, 4707-4722.	6.5	172
34	Protein-DNA binding specificity predictions with structural models. <i>Nucleic Acids Research</i> , 2005, 33, 5781-5798.	6.5	167
35	Properties of Electrons in Semiconductor Inversion Layers with Many Occupied Electric Subbands. I. Screening and Impurity Scattering. <i>Physical Review B</i> , 1970, 2, 1024-1036.	1.1	157
36	Collapse and amplification of a vortex filament. <i>Physics of Fluids</i> , 1985, 28, 794.	1.4	146

#	ARTICLE	IF	CITATIONS
37	Self-organization of stem cells into embryos: A window on early mammalian development. <i>Science</i> , 2019, 364, 948-951.	6.0	145
38	Micropattern differentiation of mouse pluripotent stem cells recapitulates embryo regionalized cell fate patterning. <i>ELife</i> , 2018, 7, .	2.8	144
39	Collapsing solutions to the 3D Euler equations. <i>Physics of Fluids A, Fluid Dynamics</i> , 1990, 2, 220-241.	1.6	129
40	Dynamics of defects in Rayleigh-Bénard convection. <i>Physical Review A</i> , 1981, 24, 1036-1049.	1.0	128
41	A 3D model of a human epiblast reveals BMP4-driven symmetry breaking. <i>Nature Cell Biology</i> , 2019, 21, 900-910.	4.6	128
42	Coherence and Timing of Cell Cycle Start Examined at Single-Cell Resolution. <i>Molecular Cell</i> , 2006, 21, 3-14.	4.5	125
43	A Microfluidic Device for Temporally Controlled Gene Expression and Long-Term Fluorescent Imaging in Unperturbed Dividing Yeast Cells. <i>PLoS ONE</i> , 2008, 3, e1468.	1.1	122
44	Diffusion in Inhomogeneous Media: Theory and Simulations Applied to Whole Cell Photobleach Recovery. <i>Biophysical Journal</i> , 2000, 79, 1761-1770.	0.2	121
45	Self-organization of human embryonic stem cells on micropatterns. <i>Nature Protocols</i> , 2016, 11, 2223-2232.	5.5	119
46	The density distribution of a weakly interacting bose gas in an external potential. <i>Journal of Low Temperature Physics</i> , 1982, 46, 137-149.	0.6	114
47	Exponential tails and random advection. <i>Physical Review Letters</i> , 1991, 66, 2984-2987.	2.9	110
48	Ground-state properties of the two-dimensional antiferromagnetic Heisenberg model. <i>Physical Review B</i> , 1989, 39, 2484-2493.	1.1	109
49	Human neural tube morphogenesis in vitro by geometric constraints. <i>Nature</i> , 2021, 599, 268-272.	13.7	107
50	Phenotypic model for early T-cell activation displaying sensitivity, specificity, and antagonism. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, E888-97.	3.3	101
51	Encoding of Temporal Signals by the TGF- $\beta$ Pathway and Implications for Embryonic Patterning. <i>Developmental Cell</i> , 2014, 30, 334-342.	3.1	101
52	High Functional Overlap Between Mlu1 Cell-Cycle Box Binding Factor and Swi4/6 Cell-Cycle Box Binding Factor in the G1/S Transcriptional Program in <i>Saccharomyces cerevisiae</i> . <i>Genetics</i> , 2005, 171, 49-61.	1.2	100
53	Origin of Irreversibility of Cell Cycle Start in Budding Yeast. <i>PLoS Biology</i> , 2010, 8, e1000284.	2.6	100
54	Deriving structure from evolution: metazoan segmentation. <i>Molecular Systems Biology</i> , 2007, 3, 154.	3.2	98

#	ARTICLE	IF	CITATIONS
55	Turbulent Premixed Flames and Sound Generation. <i>Combustion Science and Technology</i> , 1991, 78, 147-155.	1.2	97
56	Stability of finite-amplitude convection. <i>Physics of Fluids</i> , 1983, 26, 2905.	1.4	95
57	Vortex dynamics of the two-dimensional turbulent shear layer. <i>Journal of Fluid Mechanics</i> , 1980, 100, 705-737.	1.4	91
58	Dynamics of TGF- $\beta^2$ signaling reveal adaptive and pulsatile behaviors reflected in the nuclear localization of transcription factor Smad4. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, E1947-56.	3.3	89
59	A wave of WNT signalling balanced by secreted inhibitors controls primitive streak formation in micropattern colonies of human embryonic stem cells. <i>Development (Cambridge)</i> , 2019, 146, .	1.2	89
60	Mobile vacancy in a quantum antiferromagnet: Effective Hamiltonian. <i>Physical Review B</i> , 1990, 42, 2485-2500.	1.1	85
61	Temperature compensation and temperature sensation in the circadian clock. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E6284-92.	3.3	84
62	Nucleosome-Depleted Regions in Cell-Cycle-Regulated Promoters Ensure Reliable Gene Expression in Every Cell Cycle. <i>Developmental Cell</i> , 2010, 18, 544-555.	3.1	83
63	Vortex dynamics and the existence of solutions to the Navier–Stokes equations. <i>Physics of Fluids</i> , 1987, 30, 1606.	1.4	82
64	Development of singular solutions to the axisymmetric Euler equations. <i>Physics of Fluids A, Fluid Dynamics</i> , 1992, 4, 1472-1491.	1.6	82
65	Identification of the binding sites of regulatory proteins in bacterial genomes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 11772-11777.	3.3	78
66	Evolution and breakdown of a vortex street in two dimensions. <i>Journal of Fluid Mechanics</i> , 1981, 109, 435-463.	1.4	76
67	The Role of Proofreading in Signal Transduction Specificity. <i>Biophysical Journal</i> , 2002, 82, 2928-2933.	0.2	76
68	Long-Term High-Resolution Imaging of Developing <i>C.Âlegans</i> Larvae with Microfluidics. <i>Developmental Cell</i> , 2017, 40, 202-214.	3.1	75
69	Intermittency effects in a numerical simulation of stationary three-dimensional turbulence. <i>Journal of Fluid Mechanics</i> , 1978, 86, 567-592.	1.4	74
70	Symmetry and Scaling of Turbulent Mixing. <i>Physical Review Letters</i> , 1996, 77, 2463-2466.	2.9	71
71	Topological constraints on quasicrystal transformations. <i>Physical Review B</i> , 1986, 34, 3649-3669.	1.1	68
72	Ground state of a mobile vacancy in a quantum antiferromagnet: Small-cluster study. <i>Physical Review B</i> , 1990, 41, 6715-6723.	1.1	68

#	ARTICLE	IF	CITATIONS
73	Tricritical dynamics near four dimensions. <i>Physical Review B</i> , 1977, 15, 1427-1444.	1.1	67
74	A case study of evolutionary computation of biochemical adaptation. <i>Physical Biology</i> , 2008, 5, 026009.	0.8	66
75	Statistically derived geometrical landscapes capture principles of decision-making dynamics during cell fate transitions. <i>Cell Systems</i> , 2022, 13, 12-28.e3.	2.9	66
76	Bose Condensation in Spin-Polarized Atomic Hydrogen. <i>Physical Review Letters</i> , 1980, 44, 1423-1426.	2.9	65
77	WNT signaling memory is required for ACTIVIN to function as a morphogen in human gastruloids. <i>ELife</i> , 2018, 7, .	2.8	64
78	Mean-field theory for vacancies in a quantum antiferromagnet. <i>Physical Review B</i> , 1989, 40, 9162-9166.	1.1	62
79	Connecting protein structure with predictions of regulatory sites. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 7068-7073.	3.3	60
80	Computational methods for transcriptional regulation. <i>Current Opinion in Genetics and Development</i> , 2005, 15, 214-221.	1.5	58
81	Probabilistic clustering of sequences: Inferring new bacterial regulons by comparative genomics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 7323-7328.	3.3	57
82	Decisions on the fly in cellular sensory systems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, E3704-12.	3.3	57
83	Origin of intermittency in fully developed turbulence. <i>Physical Review A</i> , 1977, 15, 1730-1750.	1.0	56
84	Pseudospin formulation of kinetic Ising models. <i>Physical Review B</i> , 1977, 16, 2319-2320.	1.1	56
85	Fluctuations about hydrodynamic nonequilibrium steady states. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1980, 76, 57-60.	0.9	54
86	Point-vortex simulation of the inverse energy cascade in two-dimensional turbulence. <i>Physics of Fluids</i> , 1981, 24, 171.	1.4	54
87	Perturbation theory for the $\hat{\nu}$ -correlated model of passive scalar advection near the Batchelor limit. <i>Physical Review E</i> , 1997, 55, R1263-R1266.	0.8	53
88	Invariants for the one-point vorticity and strain rate correlation functions. <i>Physics of Fluids</i> , 1981, 24, 1934.	1.4	52
89	Incipient singularities in the Navier-Stokes equations. <i>Physical Review Letters</i> , 1985, 55, 1749-1752.	2.9	51
90	Finite-time singularities in the axisymmetric three-dimension Euler equations. <i>Physical Review Letters</i> , 1992, 68, 1511-1514.	2.9	50

#	ARTICLE	IF	CITATIONS
91	Model of intermittency in three-dimensional turbulence. <i>Physical Review A</i> , 1978, 17, 1166-1176.	1.0	47
92	Geometry of gene regulatory dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	46
93	Mechanical regulation of early vertebrate embryogenesis. <i>Nature Reviews Molecular Cell Biology</i> , 2022, 23, 169-184.	16.1	44
94	Excitation spectrum of the spiral state of a doped antiferromagnet. <i>Physical Review B</i> , 1992, 46, 8305-8311.	1.1	43
95	Adaptive Temperature Compensation in Circadian Oscillations. <i>PLoS Computational Biology</i> , 2012, 8, e1002585.	1.5	43
96	Disappearance of stable convection between free-slip boundaries. <i>Physical Review A</i> , 1982, 26, 1788-1790.	1.0	42
97	Skewed, exponential pressure distributions from Gaussian velocities. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 2525-2532.	1.6	42
98	Sequence Turnover and Tandem Repeats in cis-Regulatory Modules in <i>Drosophila</i> . <i>Molecular Biology and Evolution</i> , 2005, 22, 874-885.	3.5	41
99	Spin-wave velocity and susceptibility for the two-dimensional Heisenberg antiferromagnet. <i>Physical Review B</i> , 1989, 40, 11328-11330.	1.1	40
100	Structures and Multipoint Correlators for Turbulent Advection: Predictions and Experiments. <i>Physical Review Letters</i> , 1998, 81, 4373-4376.	2.9	39
101	Gene-free methodology for cell fate dynamics during development. <i>ELife</i> , 2017, 6, .	2.8	36
102	$\hat{\rho}$ -perturbation theory in semiconductor alloys. <i>Physical Review B</i> , 1974, 10, 5147-5158.	1.1	34
103	Mapping cell migrations and fates in a gastruloid model to the human primitive streak. <i>Development (Cambridge)</i> , 2019, 146, .	1.2	32
104	Critical dynamics of helium below $T_c$ . <i>Physical Review B</i> , 1976, 13, 3218-3221.	1.1	31
105	Cascade model of fully developed turbulence. <i>Journal of Statistical Physics</i> , 1978, 19, 543-552.	0.5	31
106	Phenotypic models of evolution and development: geometry as destiny. <i>Current Opinion in Genetics and Development</i> , 2012, 22, 627-633.	1.5	31
107	Critical dynamics of dilute $^3\text{He}$ - $^4\text{He}$ mixtures. <i>Physical Review B</i> , 1977, 15, 2830-2834.	1.1	30
108	Vortex morphology and Kelvin's theorem. <i>Physical Review A</i> , 1992, 45, R5351-R5354.	1.0	29

#	ARTICLE	IF	CITATIONS
109	InÂvitro attachment and symmetry breaking of a human embryo model assembled from primed embryonic stem cells. <i>Cell Stem Cell</i> , 2022, 29, 962-972.e4.	5.2	27
110	Gene Expression From Random Libraries of Yeast Promoters. <i>Genetics</i> , 2006, 172, 2113-2122.	1.2	26
111	Hydrodynamics of the condensed phases of spin-polarized atomic hydrogen. <i>Physical Review B</i> , 1981, 23, 3580-3583.	1.1	24
112	PainlevÃ© property and integrability. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1986, 119, 112-116.	0.9	24
113	Anomalous scaling for a passive scalar near the Batchelor limit. <i>Physical Review E</i> , 1998, 57, 2965-2977.	0.8	23
114	Modeling Mammalian Gastrulation With Embryonic Stem Cells. <i>Current Topics in Developmental Biology</i> , 2018, 129, 1-23.	1.0	23
115	Comment on dynamical theories of the liquid-glass transition. <i>Physical Review A</i> , 1985, 32, 3135-3138.	1.0	22
116	PainlevÃ© property and geometry. <i>Physica D: Nonlinear Phenomena</i> , 1989, 34, 303-346.	1.3	22
117	Small-scale anisotropy in turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2016, 804, 5-23.	1.4	22
118	Surface magnetic relaxation rates in spin-polarized hydrogen. <i>Physical Review B</i> , 1982, 25, 6031-6034.	1.1	15
119	Predicting Ancestral Segmentation Phenotypes from <i>Drosophila</i> to <i>Anopheles</i> Using In Silico Evolution. <i>PLoS Genetics</i> , 2016, 12, e1006052.	1.5	15
120	Universal transition in a dynamical system forced at two incommensurate frequencies. <i>Physica D: Nonlinear Phenomena</i> , 1984, 11, 193-211.	1.3	13
121	InÂvitro modeling of early mammalian embryogenesis. <i>Current Opinion in Biomedical Engineering</i> , 2020, 13, 134-143.	1.8	13
122	Critical dynamics of kinetic Ising models in four dimensions. <i>Physical Review B</i> , 1975, 11, 4736-4736.	1.1	12
123	Shake It, Donâ€™t Break It: Positive Feedback and the Evolution of Oscillator Design. <i>Developmental Cell</i> , 2005, 9, 309-310.	3.1	12
124	Differential compartmentalization of BMP4/NOGGIN requires NOGGIN trans-epithelial transport. <i>Developmental Cell</i> , 2021, 56, 1930-1944.e5.	3.1	11
125	On the interface dynamics for convention in porous media. <i>Physica D: Nonlinear Phenomena</i> , 1992, 57, 311-329.	1.3	8
126	Mechanisms underlying WNT-mediated priming of human embryonic stem cells. <i>Development (Cambridge)</i> , 2022, 149, .	1.2	8



#	ARTICLE	IF	CITATIONS
127	High Rayleigh number convection and passive scalar mixing. <i>Physica D: Nonlinear Phenomena</i> , 1996, 97, 286-290.	1.3	5
128	Turbulent mixing of a passive scalar. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 263, 95-103.	1.2	3
129	Signaling dynamics and embryonic development. <i>Cell Cycle</i> , 2012, 11, 3529-3530.	1.3	3
130	SCALING AND STRUCTURES IN FULLY TURBULENT FLOWS. <i>Annals of the New York Academy of Sciences</i> , 1980, 357, 368-376.	1.8	2
131	The strong coupling limit of K.A.M. theory and the onset of turbulence. <i>Physics Reports</i> , 1984, 103, 87-94.	10.3	1
132	A rapidly convergent method for the inversion of separable, positive, self-adjoint discrete elliptic operators in three or more dimensions. <i>Journal of Computational Physics</i> , 1987, 72, 498-500.	1.9	1
133	Developmental regulatory bits. <i>Molecular Systems Biology</i> , 2008, 4, 226.	3.2	1
134	Onset of turbulent convection in large cells. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1983, 118, 335.	1.2	0
135	Singular solutions to the 3D axisymmetric incompressible Euler equations. <i>Physica D: Nonlinear Phenomena</i> , 1992, 61, 240-245.	1.3	0
136	Decoding the Genome. <i>Annales Henri Poincare</i> , 2003, 4, 663-666.	0.8	0
137	Nucleosome Depleted Region In Promoter Improves Robustness In Gene Expression. <i>Biophysical Journal</i> , 2009, 96, 567a.	0.2	0
138	Comment on "Controlling long-term signaling: Receptor dynamics determine attenuation and refractory behavior of the TGF- $\beta$ 2 pathway" "Smad2/3 activity does not predict the dynamics of transcription. <i>Science Signaling</i> , 2014, 7, lc1.	1.6	0
139	A Geometric Model of Stripe Refinement. <i>Developmental Cell</i> , 2017, 41, 225-227.	3.1	0