

# Michael D Graham

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

143  
papers

6,079  
citations

44  
h-index

73  
g-index

155  
ext. papers

6,651  
ext. citations

5  
avg, IF

6.23  
L-index

#	Paper	IF	Citations
143	Wrinkling and multiplicity in the dynamics of deformable sheets in uniaxial extensional flow. <i>Physical Review Fluids</i> , <b>2022</b> , 7,	2.8	1
142	Discovering multiscale and self-similar structure with data-driven wavelets. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2021</b> , 118,	11.5	1
141	Symmetry reduction for deep reinforcement learning active control of chaotic spatiotemporal dynamics. <i>Physical Review E</i> , <b>2021</b> , 104, 014210	2.4	3
140	Exact Coherent States and the Nonlinear Dynamics of Wall-Bounded Turbulent Flows. <i>Annual Review of Fluid Mechanics</i> , <b>2021</b> , 53, 227-253	2.2	23
139	Coil-stretch-like transition of elastic sheets in extensional flows. <i>Soft Matter</i> , <b>2021</b> , 17, 543-553	3.6	6
138	Constitutive modeling of dilute wormlike micelle solutions: Shear-induced structure and transient dynamics. <i>Journal of Non-Newtonian Fluid Mechanics</i> , <b>2021</b> , 295, 104606	2.7	3
137	Tollmien-Schlichting route to elastoinertial turbulence in channel flow. <i>Physical Review Fluids</i> , <b>2021</b> , 6,	2.8	4
136	Low- and High-Drag Intermittencies in Turbulent Channel Flows. <i>Entropy</i> , <b>2020</b> , 22,	2.8	4
135	Self-sustained elastoinertial Tollmien-Schlichting waves. <i>Journal of Fluid Mechanics</i> , <b>2020</b> , 897,	3.7	14
134	Deep learning to discover and predict dynamics on an inertial manifold. <i>Physical Review E</i> , <b>2020</b> , 101, 062209	2.4	13
133	Multiplicity of stable orbits for deformable prolate capsules in shear flow. <i>Physical Review Fluids</i> , <b>2020</b> , 5,	2.8	3
132	Flow-induced segregation and dynamics of red blood cells in sickle cell disease. <i>Physical Review Fluids</i> , <b>2020</b> , 5,	2.8	2
131	An experimental investigation into spatiotemporal intermittencies in turbulent channel flow close to transition. <i>Experiments in Fluids</i> , <b>2019</b> , 60, 1	2.5	8
130	Critical-Layer Structures and Mechanisms in Elastoinertial Turbulence. <i>Physical Review Letters</i> , <b>2019</b> , 122, 124503	7.4	37
129	Dynamics of deformable straight and curved prolate capsules in simple shear flow. <i>Physical Review Fluids</i> , <b>2019</b> , 4,	2.8	6
128	Stiff Erythrocyte Subpopulations Biomechanically Induce Endothelial Inflammation in Sickle Cell Disease. <i>Blood</i> , <b>2019</b> , 134, 3560-3560	2.2	1
127	Mechanistic constitutive model for wormlike micelle solutions with flow-induced structure formation. <i>Journal of Non-Newtonian Fluid Mechanics</i> , <b>2018</b> , 251, 97-106	2.7	12

126	Pressure-driven flow of lignocellulosic biomass: A compressible Bingham fluid. <i>Journal of Rheology</i> , <b>2018</b> , 62, 801-815	4.1	4
125	Polymer turbulence with Reynolds and Riemann. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 848, 1-4	3.7	4
124	Exact coherent states with hairpin-like vortex structure in channel flow. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 849, 76-89	3.7	13
123	Bursting and critical layer frequencies in minimal turbulent dynamics and connections to exact coherent states. <i>Physical Review Fluids</i> , <b>2018</b> , 3,	2.8	10
122	Microhydrodynamics, Brownian Motion, and Complex Fluids <b>2018</b> ,		40
121	Impacts of multiflagellarity on stability and speed of bacterial locomotion. <i>Physical Review E</i> , <b>2018</b> , 98,	2.4	10
120	Spatiotemporal dynamics of viscoelastic turbulence in transitional channel flow. <i>Journal of Non-Newtonian Fluid Mechanics</i> , <b>2017</b> , 244, 104-122	2.7	19
119	Buckling Instabilities and Complex Trajectories in a Simple Model of Uniflagellar Bacteria. <i>Biophysical Journal</i> , <b>2017</b> , 112, 1010-1022	2.9	9
118	Dynamics of Miura-patterned foldable sheets in shear flow. <i>Soft Matter</i> , <b>2017</b> , 13, 2620-2633	3.6	5
117	Temporal and spatial intermittencies within channel flow turbulence near transition. <i>Physical Review Fluids</i> , <b>2017</b> , 2,	2.8	18
116	Low-drag events in transitional wall-bounded turbulence. <i>Physical Review Fluids</i> , <b>2017</b> , 2,	2.8	20
115	Low-dimensional representations of exact coherent states of the Navier-Stokes equations from the resolvent model of wall turbulence. <i>Physical Review E</i> , <b>2016</b> , 93, 021102	2.4	11
114	General Equations of Newtonian Fluid Dynamics <b>2016</b> , 3-1-3-18		
113	Shape-mediated margination and demargination in flowing multicomponent suspensions of deformable capsules. <i>Soft Matter</i> , <b>2016</b> , 12, 1683-700	3.6	11
112	Cellular softening mediates leukocyte demargination and trafficking, thereby increasing clinical blood counts. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2016</b> , 113, 1987-92	11.5	63
111	Mechanistic theory of margination and flow-induced segregation in confined multicomponent suspensions: Simple shear and Poiseuille flows*. <i>Physical Review Fluids</i> , <b>2016</b> , 1,	2.8	25
110	Margination regimes and drainage transition in confined multicomponent suspensions. <i>Physical Review Letters</i> , <b>2015</b> , 114, 188101	7.4	20
109	Fluid dynamics: Turbulence spreads like wildfire. <i>Nature</i> , <b>2015</b> , 526, 508-9	50.4	8

108	Exact coherent states and connections to turbulent dynamics in minimal channel flow. <i>Journal of Fluid Mechanics</i> , <b>2015</b> , 782, 430-454	3.7	43
107	Dynamics of a single red blood cell in simple shear flow. <i>Physical Review E</i> , <b>2015</b> , 92, 042710	2.4	40
106	Cell Distribution and Segregation Phenomena During Blood Flow <b>2015</b> , 399-435		3
105	Shear-induced diffusion in dilute curved fiber suspensions in simple shear flow. <i>Physics of Fluids</i> , <b>2014</b> , 26, 033301	4.4	5
104	Time-series and extended Karhunen-Loève analysis of turbulent drag reduction in polymer solutions. <i>AIChE Journal</i> , <b>2014</b> , 60, 1460-1475	3.6	27
103	Flow-induced segregation in confined multicomponent suspensions: effects of particle size and rigidity. <i>Journal of Fluid Mechanics</i> , <b>2014</b> , 738, 423-462	3.7	56
102	Drag reduction and the dynamics of turbulence in simple and complex fluids). <i>Physics of Fluids</i> , <b>2014</b> , 26, 101301	4.4	103
101	Intermittent dynamics of turbulence hibernation in Newtonian and viscoelastic minimal channel flows. <i>Journal of Fluid Mechanics</i> , <b>2012</b> , 693, 433-472	3.7	39
100	Mechanism of margination in confined flows of blood and other multicomponent suspensions. <i>Physical Review Letters</i> , <b>2012</b> , 109, 108102	7.4	110
99	Flipping, scooping, and spinning: Drift of rigid curved nonchiral fibers in simple shear flow. <i>Physics of Fluids</i> , <b>2012</b> , 24, 123304	4.4	19
98	Accelerated boundary integral method for multiphase flow in non-periodic geometries. <i>Journal of Computational Physics</i> , <b>2012</b> , 231, 6682-6713	4.1	48
97	An immersed boundary method for Brownian dynamics simulation of polymers in complex geometries: application to DNA flowing through a nanoslit with embedded nanopits. <i>Journal of Chemical Physics</i> , <b>2012</b> , 136, 014901	3.9	40
96	Dynamics on the laminar-turbulent boundary and the origin of the maximum drag reduction asymptote. <i>Physical Review Letters</i> , <b>2012</b> , 108, 028301	7.4	52
95	Margination and segregation in confined flows of blood and other multicomponent suspensions. <i>Soft Matter</i> , <b>2012</b> , 8, 10536	3.6	110
94	Depletion layer formation in suspensions of elastic capsules in Newtonian and viscoelastic fluids. <i>Physics of Fluids</i> , <b>2012</b> , 24, 061902	4.4	43
93	Fluid Dynamics of Dissolved Polymer Molecules in Confined Geometries. <i>Annual Review of Fluid Mechanics</i> , <b>2011</b> , 43, 273-298	2.2	109
92	Coexistence of tight and loose bundled states in a model of bacterial flagellar dynamics. <i>Physical Review E</i> , <b>2011</b> , 84, 011910	2.4	27
91	Segregation by membrane rigidity in flowing binary suspensions of elastic capsules. <i>Physical Review E</i> , <b>2011</b> , 84, 066316	2.4	56

90	Streamwise variation of turbulent dynamics in boundary layer flow of drag-reducing fluid. <i>Journal of Fluid Mechanics</i> , <b>2011</b> , 686, 352-377	3.7	25
89	Correlations and fluctuations of stress and velocity in suspensions of swimming microorganisms. <i>Physics of Fluids</i> , <b>2011</b> , 23, 121902	4.4	22
88	Active and hibernating turbulence in minimal channel flow of newtonian and polymeric fluids. <i>Physical Review Letters</i> , <b>2010</b> , 104, 218301	7.4	71
87	Pair collisions of fluid-filled elastic capsules in shear flow: Effects of membrane properties and polymer additives. <i>Physics of Fluids</i> , <b>2010</b> , 22, 123103	4.4	32
86	Turbulent drag reduction and multistage transitions in viscoelastic minimal flow units. <i>Journal of Fluid Mechanics</i> , <b>2010</b> , 647, 421-452	3.7	48
85	Tethered DNA dynamics in shear flow. <i>Journal of Chemical Physics</i> , <b>2009</b> , 130, 234902	3.9	35
84	Dynamics of confined suspensions of swimming particles. <i>Journal of Physics Condensed Matter</i> , <b>2009</b> , 21, 204107	1.8	72
83	Multiple free energy minima in systems of confined tethered polymers toward soft nanomechanical bistable elements. <i>Soft Matter</i> , <b>2009</b> , 5, 3694	3.6	4
82	Dynamics of virus spread in the presence of fluid flow. <i>Integrative Biology (United Kingdom)</i> , <b>2009</b> , 1, 664-671	3.7	10
81	A mechanism for oscillatory instability in viscoelastic cross-slot flow. <i>Journal of Fluid Mechanics</i> , <b>2009</b> , 622, 145-165	3.7	36
80	The effect of hydrodynamic interactions on the dynamics of DNA translocation through pores. <i>Journal of Chemical Physics</i> , <b>2008</b> , 128, 085102	3.9	55
79	Diffusion and spatial correlations in suspensions of swimming particles. <i>Physical Review Letters</i> , <b>2008</b> , 100, 248101	7.4	161
78	Enhancement of mixing and adsorption in microfluidic devices by shear-induced diffusion and topography-induced secondary flow. <i>Physics of Fluids</i> , <b>2008</b> , 20, 053304	4.4	17
77	Methods for generation of spatial gradients in concentration of monomeric surfactants and micelles in microfluidic systems. <i>Langmuir</i> , <b>2007</b> , 23, 9578-85	4	6
76	Modeling DNA in Confinement: A Comparison between the Brownian Dynamics and Lattice Boltzmann Method. <i>Macromolecules</i> , <b>2007</b> , 40, 5978-5984	5.5	36
75	Fast computation of many-particle hydrodynamic and electrostatic interactions in a confined geometry. <i>Physical Review Letters</i> , <b>2007</b> , 98, 140602	7.4	119
74	Shear-induced diffusion in dilute suspensions of spherical or nonspherical particles: Effects of irreversibility and symmetry breaking. <i>Physics of Fluids</i> , <b>2007</b> , 19, 073602	4.4	21
73	Simulation of nonlinear shear rheology of dilute salt-free polyelectrolyte solutions. <i>Journal of Chemical Physics</i> , <b>2007</b> , 126, 124906	3.9	15

72	Polymer induced drag reduction in exact coherent structures of plane Poiseuille flow. <i>Physics of Fluids</i> , <b>2007</b> , 19, 083101	4.4	41
71	A single-molecule barcoding system using nanoslits for DNA analysis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2007</b> , 104, 2673-8	11.5	265
70	N log N method for hydrodynamic interactions of confined polymer systems: Brownian dynamics. <i>Journal of Chemical Physics</i> , <b>2006</b> , 125, 164906	3.9	30
69	Concentration dependence of shear and extensional rheology of polymer solutions: Brownian dynamics simulations. <i>Journal of Rheology</i> , <b>2006</b> , 50, 137-167	4.1	68
68	Cross-stream-line migration in confined flowing polymer solutions: Theory and simulation. <i>Physics of Fluids</i> , <b>2006</b> , 18, 123101	4.4	49
67	Cross-stream migration of flexible molecules in a nanochannel. <i>Physical Review Letters</i> , <b>2006</b> , 96, 224505	7.4	60
66	Nonlinear travelling waves as a framework for understanding turbulent drag reduction. <i>Journal of Fluid Mechanics</i> , <b>2006</b> , 565, 353	3.7	32
65	Transport and collective dynamics in suspensions of confined swimming particles. <i>Physical Review Letters</i> , <b>2005</b> , 95, 204501	7.4	302
64	Role of desorption kinetics in determining marangoni flows generated by using electrochemical methods and redox-active surfactants. <i>Langmuir</i> , <b>2005</b> , 21, 2235-41	4	12
63	DNA Molecules in Microfluidic Oscillatory Flow. <i>Macromolecules</i> , <b>2005</b> , 38, 6680-6687	5.5	57
62	Theory of shear-induced migration in dilute polymer solutions near solid boundaries. <i>Physics of Fluids</i> , <b>2005</b> , 17, 083103	4.4	148
61	Viscoelastic Nonlinear Traveling Waves and Drag Reduction in Plane Poiseuille Flow <b>2005</b> , 289-312		5
60	Conformation and dynamics of single DNA molecules in parallel-plate slit microchannels. <i>Physical Review E</i> , <b>2004</b> , 70, 060901	2.4	135
59	Shear-induced migration in flowing polymer solutions: simulation of long-chain DNA in microchannels [corrected]. <i>Journal of Chemical Physics</i> , <b>2004</b> , 120, 2513-29	3.9	208
58	Numerical modeling of two-fluid Taylor-Couette flow with deformable capillary liquid-liquid interface. <i>Physics of Fluids</i> , <b>2004</b> , 16, 4066-4074	4.4	11
57	Polymer drag reduction in exact coherent structures of plane shear flow. <i>Physics of Fluids</i> , <b>2004</b> , 16, 3470-3482	7.4	62
56	An externally driven magnetic microstirrer. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , <b>2004</b> , 362, 1059-68	3	79
55	A microfluidic system for large DNA molecule arrays. <i>Analytical Chemistry</i> , <b>2004</b> , 76, 5293-301	7.8	155

54	Interfacial hoop stress and instability of viscoelastic free surface flows. <i>Physics of Fluids</i> , <b>2003</b> , 15, 1702	4.4	40
53	Polymer dynamics in a model of the turbulent buffer layer. <i>Physics of Fluids</i> , <b>2003</b> , 15, 1247-1256	4.4	40
52	DNA dynamics in a microchannel. <i>Physical Review Letters</i> , <b>2003</b> , 91, 038102	7.4	152
51	Coarse Brownian dynamics for nematic liquid crystals: Bifurcation, projective integration, and control via stochastic simulation. <i>Journal of Chemical Physics</i> , <b>2003</b> , 118, 10149-10156	3.9	73
50	Effect of confinement on DNA dynamics in microfluidic devices. <i>Journal of Chemical Physics</i> , <b>2003</b> , 119, 1165-1173	3.9	152
49	Structure evolution in electrorheological and magnetorheological suspensions from a continuum perspective. <i>Journal of Applied Physics</i> , <b>2003</b> , 93, 5769-5779	2.5	47
48	A method for multiscale simulation of flowing complex fluids. <i>Journal of Non-Newtonian Fluid Mechanics</i> , <b>2002</b> , 108, 123-142	2.7	18
47	Toward a structural understanding of turbulent drag reduction: nonlinear coherent states in viscoelastic shear flows. <i>Physical Review Letters</i> , <b>2002</b> , 89, 208301	7.4	55
46	Stochastic simulations of DNA in flow: Dynamics and the effects of hydrodynamic interactions. <i>Journal of Chemical Physics</i> , <b>2002</b> , 116, 7752-7759	3.9	232
45	A TWO-FLUID MODEL FOR ELECTRO- AND MAGNETORHEOLOGICAL SUSPENSIONS. <i>International Journal of Modern Physics B</i> , <b>2002</b> , 16, 2669-2675	1.1	2
44	Influence of Surface Tension-Driven Convection on Cyclic Voltammograms of Langmuir Films of Redox-Active Amphiphiles. <i>Langmuir</i> , <b>2002</b> , 18, 9882-9887	4	7
43	Pattern formation in flowing electrorheological fluids. <i>Physical Review Letters</i> , <b>2002</b> , 88, 188301	7.4	42
42	Comment on "Convective nonlinearity in non-Newtonian fluids". <i>Physical Review Letters</i> , <b>2001</b> , 86, 744-57.4	5	
41	Finite-amplitude solitary states in viscoelastic shear flow: computation and mechanism. <i>Journal of Fluid Mechanics</i> , <b>2001</b> , 443, 301-328	3.7	14
40	Slip, Concentration Fluctuations, and Flow Instability in Sheared Polymer Solutions. <i>Macromolecules</i> , <b>2001</b> , 34, 5731-5733	5.5	20
39	Stability of viscoelastic shear flows subjected to parallel flow superposition. <i>Physics of Fluids</i> , <b>2000</b> , 12, 2702	4.4	4
38	Mass transport in a novel two-fluid Taylor vortex extractor. <i>AIChE Journal</i> , <b>2000</b> , 46, 2395-2407	3.6	45
37	Buckling instabilities in models of viscoelastic free surface flows. <i>Journal of Non-Newtonian Fluid Mechanics</i> , <b>2000</b> , 89, 337-351	2.7	12

36	Two-fluid Taylor-Couette flow with countercurrent axial flow: Linear theory for immiscible liquids between corotating cylinders. <i>Physics of Fluids</i> , <b>2000</b> , 12, 294-303	4.4	25
35	Symmetric diblock copolymer thin films confined between homogeneous and patterned surfaces: Simulations and theory. <i>Journal of Chemical Physics</i> , <b>2000</b> , 112, 9996-10010	3.9	78
34	Solitary coherent structures in viscoelastic shear flow: computation and mechanism. <i>Physical Review Letters</i> , <b>2000</b> , 85, 4056-9	7.4	16
33	Hydrodynamic interactions in long chain polymers: Application of the Chebyshev polynomial approximation in stochastic simulations. <i>Journal of Chemical Physics</i> , <b>2000</b> , 113, 2894-2900	3.9	135
32	Prediction of mass transfer rates in spatially periodic flows. <i>Chemical Engineering Science</i> , <b>1999</b> , 54, 343-355	3.5	36
31	The sharkskin instability of polymer melt flows. <i>Chaos</i> , <b>1999</b> , 9, 154-163	3.3	39
30	Effect of wall slip on the stability of viscoelastic plane shear flow. <i>Physics of Fluids</i> , <b>1999</b> , 11, 1749-1756	4.4	14
29	Effect of pressure-dependent slip on flow curve multiplicity. <i>Rheologica Acta</i> , <b>1998</b> , 37, 245-255	2.3	14
28	A model for slip at polymer/solid interfaces. <i>Journal of Rheology</i> , <b>1998</b> , 42, 1491-1504	4.1	52
27	Two-fluid Taylor-Couette flow: Experiments and linear theory for immiscible liquids between corotating cylinders. <i>Physics of Fluids</i> , <b>1998</b> , 10, 3045-3055	4.4	44
26	Alternative approaches to the Karhunen-Loève decomposition for model reduction and data analysis. <i>Computers and Chemical Engineering</i> , <b>1996</b> , 20, 495-506	4	124
25	Wall-Slip and Polymer-Melt Flow Instability. <i>Physical Review Letters</i> , <b>1996</b> , 77, 956-959	7.4	40
24	Dynamics of concentration patterns of the NO + CO reaction on Pt: Analysis with the Karhunen-Loève decomposition. <i>Chaos, Solitons and Fractals</i> , <b>1995</b> , 5, 1817-1831	9.3	7
23	Catalysis on microstructured surfaces: Pattern formation during CO oxidation in complex Pt domains. <i>Physical Review E</i> , <b>1995</b> , 52, 76-93	2.4	60
22	Wall slip and the nonlinear dynamics of large amplitude oscillatory shear flows. <i>Journal of Rheology</i> , <b>1995</b> , 39, 697-712	4.1	86
21	Plume formation and resonant bifurcations in porous-media convection. <i>Journal of Fluid Mechanics</i> , <b>1994</b> , 272, 67-90	3.7	46
20	Effects of Boundaries on Pattern Formation: Catalytic Oxidation of CO on Platinum. <i>Science</i> , <b>1994</b> , 264, 80-2	33.3	133
19	Proper orthogonal decomposition analysis of spatiotemporal temperature patterns. <i>The Journal of Physical Chemistry</i> , <b>1993</b> , 97, 889-894		42



18	Temperature pulse dynamics on a catalytic ring. <i>The Journal of Physical Chemistry</i> , <b>1993</b> , 97, 7564-7571		36
17	Pattern selection in controlled reaction-diffusion systems. <i>Journal of Chemical Physics</i> , <b>1993</b> , 98, 2823-2836		62
16	Pulses and global bifurcations in a nonlocal reaction-diffusion system. <i>Physical Review E</i> , <b>1993</b> , 48, 2917-2923		11
15	Spatiotemporal temperature patterns during hydrogen oxidation on a nickel disk. <i>AIChE Journal</i> , <b>1993</b> , 39, 1497-1508	3.6	16
14	Patterns of temperature pulses on electrically heated catalytic ribbons. <i>Physica D: Nonlinear Phenomena</i> , <b>1993</b> , 63, 393-409	3.3	41
13	Computational efficiency and approximate inertial manifolds for a Bard convection system. <i>Journal of Nonlinear Science</i> , <b>1993</b> , 3, 153-167	2.8	33
12	Time-periodic thermal convection in Hele-Shaw slots: The diagonal oscillation. <i>Physics of Fluids A, Fluid Dynamics</i> , <b>1992</b> , 4, 2382-2393		12
11	Strongly interacting travelling waves and quasiperiodic dynamics in porous medium convection. <i>Physica D: Nonlinear Phenomena</i> , <b>1992</b> , 54, 331-350	3.3	17
10	Structure and mechanism of oscillatory convection in a cube of fluid-saturated porous material heated from below. <i>Journal of Fluid Mechanics</i> , <b>1991</b> , 232, 591	3.7	7
9	Predicting Emissions from the Thermal Processing of Hazardous Wastes. <i>Hazardous Waste and Hazardous Materials</i> , <b>1986</b> , 3, 293-307		21
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