

# James L Mcgrath

## List of Publications by Year in descending order

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103  
papers

4,191  
citations

126907

33  
h-index

118850

62  
g-index

108  
all docs

108  
docs citations

108  
times ranked

5671  
citing authors

#	ARTICLE	IF	CITATIONS
1	Charge- and size-based separation of macromolecules using ultrathin silicon membranes. <i>Nature</i> , 2007, 445, 749-753.	27.8	692
2	The influence of protein adsorption on nanoparticle association with cultured endothelial cells. <i>Biomaterials</i> , 2009, 30, 603-610.	11.4	368
3	Evidence of <i>Staphylococcus Aureus</i> Deformation, Proliferation, and Migration in Canaliculi of Live Cortical Bone in Murine Models of Osteomyelitis. <i>Journal of Bone and Mineral Research</i> , 2017, 32, 985-990.	2.8	193
4	Simultaneous Measurements of Actin Filament Turnover, Filament Fraction, and Monomer Diffusion in Endothelial Cells. <i>Biophysical Journal</i> , 1998, 75, 2070-2078.	0.5	163
5	High-Performance Separation of Nanoparticles with Ultrathin Porous Nanocrystalline Silicon Membranes. <i>ACS Nano</i> , 2010, 4, 6973-6981.	14.6	138
6	Steps and fluctuations of <i>Listeria monocytogenes</i> during actin-based motility. <i>Nature</i> , 2000, 407, 1026-1029.	27.8	118
7	Sheet migration by wounded monolayers as an emergent property of single-cell dynamics. <i>Journal of Cell Science</i> , 2007, 120, 876-884.	2.0	116
8	Recombinant human activated protein C inhibits integrin-mediated neutrophil migration. <i>Blood</i> , 2009, 113, 4078-4085.	1.4	108
9	Disruption of cAMP and Prostaglandin E <sub>2</sub> Transport by Multidrug Resistance Protein 4 Deficiency Alters cAMP-Mediated Signaling and Nociceptive Response. <i>Molecular Pharmacology</i> , 2008, 73, 243-251.	2.3	95
10	Regulation of the actin cycle in vivo by actin filament severing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2000, 97, 6532-6537.	7.1	90
11	The Force-Velocity Relationship for the Actin-Based Motility of <i>Listeria monocytogenes</i> . <i>Current Biology</i> , 2003, 13, 329-332.	3.9	88
12	Porous nanocrystalline silicon membranes as highly permeable and molecularly thin substrates for cell culture. <i>Biomaterials</i> , 2010, 31, 5408-5417.	11.4	87
13	The Mechanics of F-Actin Microenvironments Depend on the Chemistry of Probing Surfaces. <i>Biophysical Journal</i> , 2000, 79, 3258-3266.	0.5	84
14	A Mechanistic Model of the Actin Cycle. <i>Biophysical Journal</i> , 2004, 86, 2720-2739.	0.5	84
15	Nanoporous silicon nitride membranes fabricated from porous nanocrystalline silicon templates. <i>Nanoscale</i> , 2014, 6, 10798-10805.	5.6	73
16	An experimental and theoretical analysis of molecular separations by diffusion through ultrathin nanoporous membranes. <i>Journal of Membrane Science</i> , 2011, 369, 119-129.	8.2	71
17	Ion-Selective Permeability of an Ultrathin Nanoporous Silicon Membrane as Probed by Scanning Electrochemical Microscopy Using Micropipet-Supported ITIES Tips. <i>Analytical Chemistry</i> , 2010, 82, 7127-7134.	6.5	68
18	Activated Integrin VLA-4 Localizes to the Lamellipodia and Mediates T Cell Migration on VCAM-1. <i>Journal of Immunology</i> , 2009, 183, 359-369.	0.8	64

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19	High-performance, low-voltage electroosmotic pumps with molecularly thin silicon nanomembranes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 18425-18430.	7.1	64
20	DNA Translocations through Nanopores under Nanoscale Preconfinement. <i>Nano Letters</i> , 2018, 18, 660-668.	9.1	59
21	Recurrent Distal 7q11.23 Deletion Including HIP1 and YWHAG Identified in Patients with Intellectual Disabilities, Epilepsy, and Neurobehavioral Problems. <i>American Journal of Human Genetics</i> , 2010, 87, 857-865.	6.2	58
22	Evidence for Actin Cytoskeleton-dependent and -independent Pathways for RelA/p65 Nuclear Translocation in Endothelial Cells. <i>Journal of Biological Chemistry</i> , 2007, 282, 3940-3950.	3.4	57
23	A silicon nanomembrane platform for the visualization of immune cell trafficking across the human blood-brain barrier under flow. <i>Journal of Cerebral Blood Flow and Metabolism</i> , 2019, 39, 395-410.	4.3	57
24	Binding between particles and proteins in extracts: implications for microrheology and toxicity. <i>Acta Biomaterialia</i> , 2005, 1, 305-315.	8.3	54
25	Tangential Flow Microfluidics for the Capture and Release of Nanoparticles and Extracellular Vesicles on Conventional and Ultrathin Membranes. <i>Advanced Materials Technologies</i> , 2019, 4, 1900539.	5.8	53
26	Interpreting photoactivated fluorescence microscopy measurements of steady-state actin dynamics. <i>Biophysical Journal</i> , 1995, 69, 1674-1682.	0.5	52
27	Cell Spreading: The Power to Simplify. <i>Current Biology</i> , 2007, 17, R357-R358.	3.9	52
28	A Structure-Permeability Relationship of Ultrathin Nanoporous Silicon Membrane: A Comparison with the Nuclear Envelope. <i>Journal of the American Chemical Society</i> , 2008, 130, 4230-4231.	13.7	52
29	Highly permeable silicon membranes for shear free chemotaxis and rapid cell labeling. <i>Lab on A Chip</i> , 2014, 14, 2456-2468.	6.0	47
30	Ultrathin Silicon Membranes for Wearable Dialysis. <i>Advances in Chronic Kidney Disease</i> , 2013, 20, 508-515.	1.4	46
31	The Role of Substrate Curvature in Actin-Based Pushing Forces. <i>Current Biology</i> , 2004, 14, 1094-1098.	3.9	41
32	Novel Mutations Including Deletions of the Entire <i>OFD1</i> Gene in 30 Families with Type 1 Orofaciodigital Syndrome: A Study of the Extensive Clinical Variability. <i>Human Mutation</i> , 2013, 34, 237-247.	2.5	41
33	Brain endothelial tricellular junctions as novel sites for T cell diapedesis across the blood-brain barrier. <i>Journal of Cell Science</i> , 2021, 134, .	2.0	37
34	Pore Size Control of Ultrathin Silicon Membranes by Rapid Thermal Carbonization. <i>Nano Letters</i> , 2010, 10, 3904-3908.	9.1	35
35	Ultrathin Silicon Membranes for <i>In Situ</i> Optical Analysis of Nanoparticle Translocation across a Human Blood-Brain Barrier Model. <i>ACS Nano</i> , 2020, 14, 1111-1122.	14.6	33
36	Identification of Penicillin Binding Protein 4 (PBP4) as a critical factor for <i>Staphylococcus aureus</i> bone invasion during osteomyelitis in mice. <i>PLoS Pathogens</i> , 2020, 16, e1008988.	4.7	32

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37	Methods for controlling the pore properties of ultra-thin nanocrystalline silicon membranes. <i>Journal of Physics Condensed Matter</i> , 2010, 22, 454134.	1.8	31
38	Ultrathin Dual-Scale Nano- and Microporous Membranes for Vascular Transmigration Models. <i>Small</i> , 2019, 15, e1804111.	10.0	30
39	Membrane capacity and fouling mechanisms for ultrathin nanomembranes in dead-end filtration. <i>Journal of Membrane Science</i> , 2016, 499, 282-289.	8.2	28
40	An in vitro platform for elucidating the molecular genetics of <i>S. aureus</i> invasion of the osteocyte lacuno-canalicular network during chronic osteomyelitis. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2019, 21, 102039.	3.3	28
41	Opposing roles for RhoH GTPase during T-cell migration and activation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 10474-10479.	7.1	26
42	Measuring actin dynamics in endothelial cells. , 1998, 43, 385-394.		22
43	Chemical capacitive sensing using ultrathin flexible nanoporous electrodes. <i>Sensors and Actuators B: Chemical</i> , 2012, 162, 22-26.	7.8	22
44	Entropic Trapping of DNA with a Nanofiltered Nanopore. <i>ACS Applied Nano Materials</i> , 2019, 2, 4773-4781.	5.0	22
45	Membrane Mobility of $\beta$ 2 Integrins and Rolling Associated Adhesion Molecules in Resting Neutrophils. <i>Biophysical Journal</i> , 2008, 95, 4934-4947.	0.5	21
46	Second Generation Nanoporous Silicon Nitride Membranes for High Toxin Clearance and Small Format Hemodialysis. <i>Advanced Healthcare Materials</i> , 2020, 9, e1900750.	7.6	21
47	Ballistic and non-ballistic gas flow through ultrathin nanopores. <i>Nanotechnology</i> , 2012, 23, 145706.	2.6	20
48	<i>Staphylococcus aureus</i> Cell Wall Biosynthesis Modulates Bone Invasion and Osteomyelitis Pathogenesis. <i>Frontiers in Microbiology</i> , 2021, 12, 723498.	3.5	19
49	In vitro Studies of Transendothelial Migration for Biological and Drug Discovery. <i>Frontiers in Medical Technology</i> , 2020, 2, 600616.	2.5	19
50	Robust antigen-specific humoral immune responses to sublingually delivered adenoviral vectors encoding HIV-1 Env: Association with mucoadhesion and efficient penetration of the sublingual barrier. <i>Vaccine</i> , 2011, 29, 7080-7089.	3.8	16
51	Predicting the failure of ultrathin porous membranes in bulge tests. <i>Thin Solid Films</i> , 2017, 631, 152-160.	1.8	16
52	Finite element modeling to analyze TEER values across silicon nanomembranes. <i>Biomedical Microdevices</i> , 2018, 20, 11.	2.8	16
53	Microvascular Mimetics for the Study of Leukocyte-Endothelial Interactions. <i>Cellular and Molecular Bioengineering</i> , 2020, 13, 125-139.	2.1	16
54	Highly Porous Silicon Membranes Fabricated from Silicon Nitride/Silicon Stacks. <i>Small</i> , 2014, 10, 2946-2953.	10.0	15

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55	A predictive model of separations in dead-end filtration with ultrathin membranes. <i>Separation and Purification Technology</i> , 2017, 189, 40-47.	7.9	14
56	Formin' new ideas about actin filament generation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 14685-14686.	7.1	12
57	Endothelial cell apicobasal polarity coordinates distinct responses to luminally versus abluminally delivered TNF- $\alpha$ in a microvascular mimetic. <i>Integrative Biology (United Kingdom)</i> , 2020, 12, 275-289.	1.3	12
58	Human Organ-on-a-Chip Microphysiological Systems to Model Musculoskeletal Pathologies and Accelerate Therapeutic Discovery. <i>Frontiers in Bioengineering and Biotechnology</i> , 2022, 10, 846230.	4.1	12
59	Endothelial vacuolization induced by highly permeable silicon membranes. <i>Acta Biomaterialia</i> , 2014, 10, 4670-4677.	8.3	11
60	Monolithic Fabrication of NPN/SiN <sub>x</sub> Dual Membrane Cavity for Nanopore-Based DNA Sensing. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900684.	3.7	10
61	Dynein Motility: Four Heads Are Better Than Two. <i>Current Biology</i> , 2005, 15, R970-R972.	3.9	9
62	The electric field strength in orifice-like nanopores of ultrathin membranes. <i>Nanotechnology</i> , 2015, 26, 045704.	2.6	9
63	Analytical and Finite Element Modeling of Nanomembranes for Miniaturized, Continuous Hemodialysis. <i>Membranes</i> , 2016, 6, 6.	3.0	9
64	Modification of Nanoporous Silicon Nitride with Stable and Functional Organic Monolayers. <i>Chemistry of Materials</i> , 2017, 29, 2294-2302.	6.7	9
65	Critical flux behavior of ultrathin membranes in protein-rich solutions. <i>Separation and Purification Technology</i> , 2020, 251, 117342.	7.9	9
66	Real time imaging of single extracellular vesicle pH regulation in a microfluidic cross-flow filtration platform. <i>Communications Biology</i> , 2022, 5, 13.	4.4	9
67	Relationships between Actin Regulatory Mechanisms and Measurable State Variables. <i>Annals of Biomedical Engineering</i> , 2007, 35, 995-1011.	2.5	8
68	Ultrathin nanoporous membranes for insulator-based dielectrophoresis. <i>Nanotechnology</i> , 2018, 29, 235704.	2.6	8
69	Mechanical properties and deformation mechanisms of amorphous nanoporous silicon nitride membranes via combined atomistic simulations and experiments. <i>Acta Materialia</i> , 2022, 222, 117451.	7.9	8
70	LC/LC-MS/MS of an innovative prostate human epithelial cancer (PHEC) in vitro model system. <i>Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences</i> , 2012, 893-894, 34-42.	2.3	7
71	TEM Tomography of Pores with Application to Computational Nanoscale Flows in Nanoporous Silicon Nitride (NPN). <i>Membranes</i> , 2018, 8, 26.	3.0	7
72	Development of isoporous microslit silicon nitride membranes for sterile filtration applications. <i>Biotechnology and Bioengineering</i> , 2020, 117, 879-885.	3.3	7

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73	Molecular dynamics simulations of brittle to ductile transition in failure mechanism of silicon nitride nanoporous membranes. <i>Materials Today Communications</i> , 2020, 25, 101657.	1.9	6
74	Image correlation microscopy for uniform illumination. <i>Journal of Microscopy</i> , 2010, 237, 39-50.	1.8	5
75	Dynamics of adhesion molecule domains on neutrophil membranes: surfing the dynamic cell topography. <i>European Biophysics Journal</i> , 2013, 42, 851-855.	2.2	5
76	Cell Mechanics: FilaminA Leads the Way. <i>Current Biology</i> , 2006, 16, R326-R327.	3.9	4
77	Microtubule Mechanics: A Little Flexibility Goes a Long Way. <i>Current Biology</i> , 2006, 16, R800-R802.	3.9	4
78	Influence of silicon dioxide capping layers on pore characteristics in nanocrystalline silicon membranes. <i>Nanotechnology</i> , 2015, 26, 055706.	2.6	4
79	Actin Motility: Staying on Track Takes a Little More Effort. <i>Current Biology</i> , 2004, 14, R931-R932.	3.9	3
80	Ultrathin Membrane Fouling Mechanism Transitions in Dead-End Filtration of Protein. , 2016, , .		3
81	A predictive model of nanoparticle capture on ultrathin nanoporous membranes. <i>Journal of Membrane Science</i> , 2021, 633, 119357.	8.2	3
82	Rapid and specific detection of intact viral particles using functionalized microslit silicon membranes as a fouling-based sensor. <i>Analyst, The</i> , 2022, 147, 213-222.	3.5	3
83	Molecular mechanisms underlying the heterogeneous barrier responses of two primary endothelial cell types to sphingosine-1-phosphate. <i>European Journal of Cell Biology</i> , 2022, 101, 151233.	3.6	3
84	Cell dynamics and the actin cytoskeleton. , 2001, , 170-203.		2
85	Refractory Infantile Chronic Diarrhea and Failure to Thrive in a 6-Month-Old Boy With a Complex Past Medical History. <i>Clinical Pediatrics</i> , 2019, 58, 707-710.	0.8	2
86	Free Standing, Large-Area Silicon Nitride Membranes for High Toxin Clearance in Blood Surrogate for Small-Format Hemodialysis. <i>Membranes</i> , 2020, 10, 119.	3.0	2
87	DYNAMICS OF THE NEUTROPHIL SURFACE DURING EMIGRATION FROM BLOOD. , 2006, , 123-142.		1
88	Porous ultrathin silicon membranes for purification of nanoscale materials. <i>Materials Research Society Symposia Proceedings</i> , 2009, 1209, 1.	0.1	1
89	Ultrathin Silicon Membranes for Improving Extracorporeal Blood Therapies. , 2016, 2016, .		1
90	Silicon Nanomembrane Filtration and Imaging for the Evaluation of Microplastic Entrainment along a Municipal Water Delivery Route. <i>Sustainability</i> , 2020, 12, 10655.	3.2	1

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91	Dynamique du Cytosquelette: Modele Des Processus De Diffusion Et D'echange En Fluorescence Photo-Activee. Archives of Physiology and Biochemistry, 1995, 103, C99-C99.	2.1	0
92	Understanding steady-state actin dynamics with photoactivated fluorescence microscopy. Biology of the Cell, 1995, 84, 224-224.	2.0	0
93	Metallization of surface- attached actin networks. , 2006, 2006, 1466-9.		0
94	Hybrid Polymer/Ultrathin Porous Nanocrystalline Silicon Membranes System for Flow-through Chemical Vapor and Gas Detection. Materials Research Society Symposia Proceedings, 2009, 1190, 196.	0.1	0
95	A phase unwrapping algorithm based on Branch cuts for living cell's interference pattern. , 2011, , .		0
96	Dynamics of adhesion molecule domains on neutrophil membranes. Microscopy and Microanalysis, 2012, 18, 132-133.	0.4	0
97	Optically transparent and permeable microarrays for cellular assays. Microscopy and Microanalysis, 2012, 18, 262-263.	0.4	0
98	Super-thin membranes clear the way for chip-sized pumps. Membrane Technology, 2013, 2013, 9.	0.1	0
99	Nanoporous membrane robustness / stability in small form factor microfluidic filtration system. , 2016, 2016, 1955-1958.		0
100	Dualâ€Scale Nanomembranes: Ultrathin Dualâ€Scale Nanoâ€and Microporous Membranes for Vascular Transmigration Models (Small 6/2019). Small, 2019, 15, 1970035.	10.0	0
101	Segregation of adhesion molecules during neutrophil crawling. FASEB Journal, 2006, 20, A648.	0.5	0
102	Highly permeable membranes for live cell imaging of coâ€cultures. FASEB Journal, 2011, 25, lb515.	0.5	0
103	Metallization of surface- attached actin networks. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0