Celeste M Nelson

List of Publications by Citations

147 papers	13,311 citations	54 h-index	115 g-index
165 ext. papers	14,964 ext. citations	7 avg, IF	6.7 L-index

#	Paper	IF	Citations
147	Cell shape, cytoskeletal tension, and RhoA regulate stem cell lineage commitment. *Developmental Cell*, **2004**, 6, 483-95	10.2	3327
146	Rac1b and reactive oxygen species mediate MMP-3-induced EMT and genomic instability. *Nature*, **2005**, 436, 123-7	50.4	1017
145	Of extracellular matrix, scaffolds, and signaling: tissue architecture regulates development, homeostasis, and cancer. *Annual Review of Cell and Developmental Biology*, **2006**, 22, 287-309	12.6	842
144	Emergent patterns of growth controlled by multicellular form and mechanics. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 11594-9	11.5	659
143	Mechanical tugging force regulates the size of cell-cell junctions. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 9944-9	11.5	539
142	Tissue geometry determines sites of mammary branching morphogenesis in organotypic cultures. *Science*, **2006**, 314, 298-300	33.3	474
141	Modeling dynamic reciprocity: engineering three-dimensional culture models of breast architecture, function, and neoplastic transformation. *Seminars in Cancer Biology*, **2005**, 15, 342-52	12.7	267
140	Cell-cell signaling by direct contact increases cell proliferation via a PI3K-dependent signal. *FEBS Letters*, **2002**, 514, 238-42	3.8	207
139	TGF-β-induced EMT promotes targeted migration of breast cancer cells through the lymphatic system by the activation of CCR7/CCL21-mediated chemotaxis. *Oncogene*, **2016**, 35, 748-60	9.2	194
138	Simple approach to micropattern cells on common culture substrates by tuning substrate wettability. *Tissue Engineering*, **2004**, 10, 865-72		191
137	Mechanism of Akt1 inhibition of breast cancer cell invasion reveals a protumorigenic role for TSC2. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 4134-9	11.5	160
136	Vascular endothelial-cadherin regulates cytoskeletal tension, cell spreading, and focal adhesions by stimulating RhoA. *Molecular Biology of the Cell*, **2004**, 15, 2943-53	3.5	156
135	Integrated morphodynamic signalling of the mammary gland. *Nature Reviews Molecular Cell Biology* , **2011**, 12, 581-93	48.7	147
134	Human mammary progenitor cell fate decisions are products of interactions with combinatorial microenvironments. *Integrative Biology (United Kingdom)*, **2009**, 1, 70-9	3.7	144
133	Tissue geometry patterns epithelial-mesenchymal transition via intercellular mechanotransduction. *Journal of Cellular Biochemistry*, **2010**, 110, 44-51	4.7	144
132	Fabrication of aligned microstructures with a single elastomeric stamp. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 1758-62	11.5	142
131	Mechanotransduction: use the force(s). *BMC Biology*, **2015**, 13, 47	7.3	141

130	Laminin and biomimetic extracellular elasticity enhance functional differentiation in mammary epithelia. *EMBO Journal*, **2008**, 27, 2829-38	13	141
129	Cell shape regulates global histone acetylation in human mammary epithelial cells. *Experimental Cell Research*, **2007**, 313, 3066-75	4.2	136
128	Geometrically controlled endothelial tubulogenesis in micropatterned gels. *Tissue Engineering - Part A*, **2010**, 16, 2255-63	3.9	127
127	Degradation of Micropatterned Surfaces by Cell-Dependent and -Independent Processes *Langmuir*, **2003**, 19, 1493-1499	4	125
126	New insights into the regulation of epithelial-mesenchymal transition and tissue fibrosis. *International Review of Cell and Molecular Biology*, **2012**, 294, 171-221	6	120
125	Endogenous patterns of mechanical stress are required for branching morphogenesis. *Integrative Biology (United Kingdom)*, **2010**, 2, 424-34	3.7	114
124	Cellular and physical mechanisms of branching morphogenesis. *Development (Cambridge)*, **2014**, 141, 2750-9	6.6	111
123	Three-dimensional lithographically defined organotypic tissue arrays for quantitative analysis of morphogenesis and neoplastic progression. *Nature Protocols*, **2008**, 3, 674-8	18.8	106
122	Change in cell shape is required for matrix metalloproteinase-induced epithelial-mesenchymal transition of mammary epithelial cells. *Journal of Cellular Biochemistry*, **2008**, 105, 25-33	4.7	105
121	VE-cadherin simultaneously stimulates and inhibits cell proliferation by altering cytoskeletal structure and tension. *Journal of Cell Science*, **2003**, 116, 3571-81	5.3	104
120	Mapping of mechanical strains and stresses around quiescent engineered three-dimensional epithelial tissues. *Biophysical Journal*, **2012**, 103, 152-62	2.9	102
119	Cadherins, RhoA, and Rac1 are differentially required for stretch-mediated proliferation in endothelial versus smooth muscle cells. *Circulation Research*, **2007**, 101, e44-52	15.7	102
118	Microstructured extracellular matrices in tissue engineering and development. *Current Opinion in Biotechnology*, **2006**, 17, 518-23	11.4	98
117	Localized Smooth Muscle Differentiation Is Essential for Epithelial Bifurcation during Branching Morphogenesis of the Mammalian Lung. *Developmental Cell*, **2015**, 34, 719-26	10.2	96
116	Sustained activation of STAT5 is essential for chromatin remodeling and maintenance of mammary-specific function. *Journal of Cell Biology*, **2009**, 184, 57-66	7.3	92
115	Sculpting organs: mechanical regulation of tissue development. *Annual Review of Biomedical Engineering*, **2012**, 14, 129-54	12	89
114	Matrix compliance regulates Rac1b localization, NADPH oxidase assembly, and epithelial-mesenchymal transition. *Molecular Biology of the Cell*, **2012**, 23, 4097-108	3.5	87
113	E-cadherin engagement stimulates proliferation via Rac1. *Journal of Cell Biology*, **2006**, 173, 431-41	7.3	86

112	Apical constriction initiates new bud formation during monopodial branching of the embryonic chicken lung. *Development (Cambridge)*, **2013**, 140, 3146-55	6.6	84
111	Dynamic tensile forces drive collective cell migration through three-dimensional extracellular matrices. *Scientific Reports*, **2015**, 5, 11458	4.9	83
110	Quantitative relationship among integrin-ligand binding, adhesion, and signaling via focal adhesion kinase and extracellular signal-regulated kinase 2. *Journal of Biological Chemistry*, **1999**, 274, 27119-27	5.4	83
109	Tissue Stiffness and Hypoxia Modulate the Integrin-Linked Kinase ILK to Control Breast Cancer Stem-like Cells. *Cancer Research*, **2016**, 76, 5277-87	10.1	82
108	Extracellular matrix proteins regulate epithelial-mesenchymal transition in mammary epithelial cells. *Differentiation*, **2013**, 86, 126-32	3.5	79
107	Bioengineering and mechanobiology: pushing (and pulling) the limits of cellular mechanics. *Molecular Biology of the Cell*, **2012**, 23, 969-969	3.5	78
106	Rap1 integrates tissue polarity, lumen formation, and tumorigenic potential in human breast epithelial cells. *Cancer Research*, **2007**, 67, 4759-66	10.1	78
105	Transmembrane/cytoplasmic, rather than catalytic, domains of Mmp14 signal to MAPK activation and mammary branching morphogenesis via binding to integrin β1. *Development (Cambridge)*, **2013**, 140, 343-52	6.6	75
104	Self-organization of engineered epithelial tubules by differential cellular motility. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 14890-5	11.5	71
103	Mechanically patterning the embryonic airway epithelium. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 9230-5	11.5	67
102	Photoresponsive coumarin-stabilized polymeric nanoparticles as a detectable drug carrier. *Small*, **2012**, 8, 1693-700	11	66
101	Geometric control of tissue morphogenesis. *Biochimica Et Biophysica Acta - Molecular Cell Research*, **2009**, 1793, 903-10	4.9	66
100	On Buckling Morphogenesis. *Journal of Biomechanical Engineering*, **2016**, 138, 021005	2.1	64
99	Interstitial fluid pressure regulates collective invasion in engineered human breast tumors via Snail, vimentin, and E-cadherin. *Integrative Biology (United Kingdom)*, **2016**, 8, 319-31	3.7	62
98	Regulation of Epithelial-Mesenchymal Transition by Transmission of Mechanical Stress through Epithelial Tissues. *Cancer Microenvironment*, **2012**, 5, 29-38	6.1	61
97	Microfluidic chest cavities reveal that transmural pressure controls the rate of lung development. *Development (Cambridge)*, **2017**, 144, 4328-4335	6.6	58
96	Extracellular matrix and cytoskeletal dynamics during branching morphogenesis. *Organogenesis*, **2012**, 8, 56-64	1.7	57
95	Host epithelial geometry regulates breast cancer cell invasiveness. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 19632-7	11.5	57

94	Bidirectional extracellular matrix signaling during tissue morphogenesis. *Cytokine and Growth Factor Reviews*, **2009**, 20, 459-65	17.9	55
93	Snail1, Snail2, and E47 promote mammary epithelial branching morphogenesis. *EMBO Journal*, **2011**, 30, 2662-74	13	53
92	Engineering amount of cell-cell contact demonstrates biphasic proliferative regulation through RhoA and the actin cytoskeleton. *Experimental Cell Research*, **2008**, 314, 2846-54	4.2	51
91	Regulation of epithelial-mesenchymal transition in breast cancer cells by cell contact and adhesion. *Cancer Informatics*, **2015**, 14, 1-13	2.4	47
90	Lymphatic function is required prenatally for lung inflation at birth. *Journal of Experimental Medicine*, **2014**, 211, 815-26	16.6	46
89	Non-classical export of epimorphin and its adhesion to alphav-integrin in regulation of epithelial morphogenesis. *Journal of Cell Science*, **2007**, 120, 2032-43	5.3	45
88	The mechanics of development: Models and methods for tissue morphogenesis. *Birth Defects Research Part C: Embryo Today Reviews*, **2010**, 90, 193-202		42
87	Microextrusion printing cell-laden networks of type I collagen with patterned fiber alignment and geometry. *Soft Matter*, **2019**, 15, 5728-5738	3.6	41
86	Decoupling diffusional from dimensional control of signaling in 3D culture reveals a role for myosin in tubulogenesis. *Journal of Cell Science*, **2010**, 123, 2877-83	5.3	41
85	Dynamics of Tissue-Induced Alignment of Fibrous Extracellular Matrix. *Biophysical Journal*, **2017**, 113, 702-713	2.9	33
84	Smooth muscle differentiation shapes domain branches during mouse lung development. *Development (Cambridge)*, **2019**, 146,	6.6	32
83	Matrix compliance and RhoA direct the differentiation of mammary progenitor cells. *Biomechanics and Modeling in Mechanobiology*, **2012**, 11, 1241-9	3.8	29
82	Mesenchymal proteases and tissue fluidity remodel the extracellular matrix during airway epithelial branching in the embryonic avian lung. *Development (Cambridge)*, **2019**, 146,	6.6	28
81	PI3K regulates branch initiation and extension of cultured mammary epithelia via Akt and Rac1 respectively. *Developmental Biology*, **2013**, 379, 235-45	3.1	28
80	Homology with vesicle fusion mediator syntaxin-1a predicts determinants of epimorphin/syntaxin-2 function in mammary epithelial morphogenesis. *Journal of Biological Chemistry*, **2009**, 284, 6877-84	5.4	27
79	Modulation of invasive phenotype by interstitial pressure-driven convection in aggregates of human breast cancer cells. *PLoS ONE*, **2012**, 7, e45191	3.7	27
78	Lattice-based model of ductal carcinoma in situ suggests rules for breast cancer progression to an invasive state. *PLoS Computational Biology*, **2014**, 10, e1003997	5	24
77	Building branched tissue structures: from single cell guidance to coordinated construction. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2017**, 372,	5.8	22

76	Mammary branch initiation and extension are inhibited by separate pathways downstream of TGFβ in culture. *Experimental Cell Research*, **2011**, 317, 1872-84	4.2	22
75	Manipulation of cell-cell adhesion using bowtie-shaped microwells. *Methods in Molecular Biology*, **2007**, 370, 1-10	1.4	22
74	The Bioelectric Code: Reprogramming Cancer and Aging From the Interface of Mechanical and Chemical Microenvironments. *Frontiers in Cell and Developmental Biology*, **2018**, 6, 21	5.7	21
73	Pushing, pulling, and squeezing our way to understanding mechanotransduction. *Methods*, **2016**, 94, 4-12	4.6	20
72	Marangoni flows drive the alignment of fibrillar cell-laden hydrogels. *Science Advances*, **2020**, 6, eaaz7748	14.3	20
71	Inhibitory morphogens and monopodial branching of the embryonic chicken lung. *Developmental Dynamics*, **2012**, 241, 852-62	2.9	19
70	Adipose stroma induces branching morphogenesis of engineered epithelial tubules. *Tissue Engineering - Part A*, **2010**, 16, 3719-26	3.9	19
69	Regulation of tissue morphodynamics: an important role for actomyosin contractility. *Current Opinion in Genetics and Development*, **2015**, 32, 80-5	4.9	18
68	A Soft Microenvironment Protects from Failure of Midbody Abscission and Multinucleation Downstream of the EMT-Promoting Transcription Factor Snail. *Cancer Research*, **2018**, 78, 2277-2289	10.1	18
67	Pulling together: Tissue-generated forces that drive lumen morphogenesis. *Seminars in Cell and Developmental Biology*, **2016**, 55, 139-47	7.5	18
66	Tissue mechanics regulates form, function, and dysfunction. *Current Opinion in Cell Biology*, **2018**, 54, 98-105	9	18
65	Biomechanical approaches for studying integration of tissue structure and function in mammary epithelia. *Journal of Mammary Gland Biology and Neoplasia*, **2004**, 9, 361-74	2.4	18
64	Computational models of airway branching morphogenesis. *Seminars in Cell and Developmental Biology*, **2017**, 67, 170-176	7.5	17
63	Toward the directed self-assembly of engineered tissues. *Annual Review of Chemical and Biomolecular Engineering*, **2014**, 5, 507-26	8.9	17
62	Branch formation during organ development. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2010**, 2, 734-41	6.6	16
61	The Ecology of Tumors: By perturbing the microenvironment, wounds and infection may be key to tumor development **2006**, 20, 30		16
60	Smooth muscle: a stiff sculptor of epithelial shapes. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2018**, 373,	5.8	16
59	Branching morphogenesis. *Development (Cambridge)*, **2020**, 147,	6.6	15

58	Extracellular Matrix Stiffness Exists in a Feedback Loop that Drives Tumor Progression. *Advances in Experimental Medicine and Biology*, **2018**, 1092, 57-67	3.6	14
57	Microstructured extracellular matrices in tissue engineering and development: an update. *Annals of Biomedical Engineering*, **2014**, 42, 1413-23	4.7	13
56	Let's push things forward: disruptive technologies and the mechanics of tissue assembly. *Integrative Biology (United Kingdom)*, **2013**, 5, 1162-73	3.7	13
55	Matrix Pore Size Governs Escape of Human Breast Cancer Cells from a Microtumor to an Empty Cavity. *IScience*, **2020**, 23, 101673	6.1	13
54	Microfabricated tissues for investigating traction forces involved in cell migration and tissue morphogenesis. *Cellular and Molecular Life Sciences*, **2017**, 74, 1819-1834	10.3	12
53	Epithelial tissue geometry directs emergence of bioelectric field and pattern of proliferation. *Molecular Biology of the Cell*, **2020**, 31, 1691-1702	3.5	12
52	Substratum stiffness tunes proliferation downstream of Wnt3a in part by regulating integrin-linked kinase and frizzled-1. *Journal of Cell Science*, **2018**, 131,	5.3	12
51	3D culture models for studying branching morphogenesis in the mammary gland and mammalian lung. *Biomaterials*, **2019**, 198, 135-145	15.6	12
50	PI3K signaling in the regulation of branching morphogenesis. *BioSystems*, **2012**, 109, 403-11	1.9	12
49	Quantitative approaches to uncover physical mechanisms of tissue morphogenesis. *Current Opinion in Biotechnology*, **2013**, 24, 954-61	11.4	11
48	Adipose and mammary epithelial tissue engineering. *Biomatter*, **2013**, 3,		11
47	Lithographically defined two- and three-dimensional tissue microarrays. *Methods in Molecular Biology*, **2011**, 671, 107-16	1.4	11
46	Mechanics of Development. *Developmental Cell*, **2021**, 56, 240-250	10.2	10
45	Three-dimensional traction force microscopy of engineered epithelial tissues. *Methods in Molecular Biology*, **2015**, 1189, 191-206	1.4	9
44	Cell Division Induces and Switches Coherent Angular Motion within Bounded Cellular Collectives. *Biophysical Journal*, **2017**, 112, 2419-2427	2.9	8
43	Generating tissue topology through remodeling of cell-cell adhesions. *Experimental Cell Research*, **2017**, 358, 45-51	4.2	8
42	Morphogenesis and morphometric scaling of lung airway development follows phylogeny in chicken, quail, and duck embryos. *EvoDevo*, **2016**, 7, 12	3.2	8
41	From static to animated: Measuring mechanical forces in tissues. *Journal of Cell Biology*, **2017**, 216, 29-30	7.3	6

40	Forces in epithelial origami. *Developmental Cell*, **2013**, 26, 554-6	10.2	6
39	Dynamics of branched tissue assembly. *Stem Cell Research and Therapy*, **2012**, 3, 42	8.3	6
38	Soft Microenvironments Induce Chemoresistance by Increasing Autophagy Downstream of Integrin-Linked Kinase. *Cancer Research*, **2020**, 80, 4103-4113	10.1	6
37	Local accumulation of extracellular matrix regulates global morphogenetic patterning in the developing mammary gland. *Current Biology*, **2021**, 31, 1903-1917.e6	6.3	6
36	Engineered tissues to quantify collective cell migration during morphogenesis. *Methods in Molecular Biology*, **2012**, 886, 173-82	1.4	5
35	Epithelial Packing: Even the Best of Friends Must Part. *Current Biology*, **2018**, 28, R1197-R1200	6.3	5
34	Fusion of airways during avian lung development constitutes a novel mechanism for the formation of continuous lumena in multicellular epithelia. *Developmental Dynamics*, **2020**, 249, 1318-1333	2.9	4
33	Modeling branching morphogenesis using materials with programmable mechanical instabilities. *Current Opinion in Biomedical Engineering*, **2018**, 6, 66-73	4.4	4
32	A 3D Culture Model to Study How Fluid Pressure and Flow Affect the Behavior of Aggregates of Epithelial Cells. *Methods in Molecular Biology*, **2017**, 1501, 245-257	1.4	4
31	Mechanotransduction, Metastasis and Genomic Instability. *Cancer Metastasis - Biology and Treatment*, **2015**, 139-158		4
30	Matrix degradation and cell proliferation are coupled to promote invasion and escape from an engineered human breast microtumor. *Integrative Biology (United Kingdom)*, **2021**, 13, 17-29	3.7	4
29	Integrin-linked kinase tunes cell-cell and cell-matrix adhesions to regulate the switch between apoptosis and EMT downstream of TGF. *Molecular Biology of the Cell*, **2021**, 32, 402-412	3.5	4
28	Mechanics of development. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2018**, 373,	5.8	4
27	Intercellular Communication, the Tumor Microenvironment, and Tumor Progression **2015**, 343-362		3
26	Engineering Three-dimensional Epithelial Tissues Embedded within Extracellular Matrix. *Journal of Visualized Experiments*, **2016**,	1.6	3
25	Symmetry breaking during morphogenesis in the embryo and in engineered tissues. *AICHE Journal*, **2012**, 58, 3608-3613	3.6	3
24	Interstitial Hypertension Suppresses Escape of Human Breast Tumor Cells Convection of Interstitial Fluid. *Cellular and Molecular Bioengineering*, **2021**, 14, 147-159	3.9	3
23	Epithelial Engineering: From Sheets to Branched Tubes **2014**, 161-173		2

22	Engineered extracellular matrices: emerging strategies for decoupling structural and molecular signals that regulate epithelial branching morphogenesis. *Current Opinion in Biomedical Engineering* , **2020**, 13, 103-112	4.4	2
21	Substratum stiffness tunes membrane voltage in mammary epithelial cells. *Journal of Cell Science*, **2021**, 134,	5.3	2
20	Myoepithelial crowd control of cancer cells. *Journal of Cell Biology*, **2018**, 217, 3319-3321	7.3	2
19	Substratum stiffness signals through integrin-linked kinase and β1-integrin to regulate midbody proteins and abscission during EMT. *Molecular Biology of the Cell*, **2021**, 32, 1664-1676	3.5	2
18	Dynamic changes in epithelial cell packing during tissue morphogenesis. *Current Biology*, **2021**, 31, R1098-R1110	6.5	2
17	Patterning the embryonic pulmonary mesenchyme.. *IScience*, **2022**, 25, 103838	6.1	1
16	Transmural pressure signals through retinoic acid to regulate lung branching.. *Development (Cambridge)*, **2022**, 149,	6.6	1
15	Microextrusion Printing Cell-Laden Networks of Type I Collagen with Patterned Anisotropy and Geometry		1
14	Substratum stiffness regulates Erk signaling dynamics through receptor-level control.. *Cell Reports*, **2021**, 37, 110181	10.6	1
13	Revealing epithelial morphogenetic mechanisms through live imaging. *Current Opinion in Genetics and Development*, **2021**, 72, 61-68	4.9	0
12	Negative Transpulmonary Pressure Disrupts Airway Morphogenesis by Suppressing Fgf10.. *Frontiers in Cell and Developmental Biology*, **2021**, 9, 725785	5.7	0
11	The mechanics of crypt morphogenesis. *Nature Cell Biology*, **2021**, 23, 678-679	23.4	0
10	Uncovering cellular networks in branching morphogenesis using single-cell transcriptomics. *Current Topics in Developmental Biology*, **2021**, 143, 239-280	5.3	0
9	Adipose Stroma Accelerates the Invasion and Escape of Human Breast Cancer Cells from an Engineered Microtumor.. *Cellular and Molecular Bioengineering*, **2022**, 15, 15-29	3.9	0
8	Stress ball morphogenesis: How the lizard builds its lung.. *Science Advances*, **2021**, 7, eabk0161	14.3	0
7	Self-Propelled Particle Motion of Cells in Tissues. *Biophysical Journal*, **2013**, 104, 213a	2.9	
6	Determining the role of matrix compliance in the differentiation of mammary stem cells. *Methods in Molecular Biology*, **2014**, 1202, 79-94	1.4	
5	The Role of Cell Contractility in Epithelial Morphogenesis. *FASEB Journal*, **2016**, 30, 232.3	0.9	

4	Decoupling diffusional from dimensional control of signaling in 3D culture reveals a role for myosin in tubulogenesis. *Development (Cambridge)*, **2010**, 137, e1-e1	6.6
3	Transmembrane/cytoplasmic, rather than catalytic, domains of Mmp14 signal to MAPK activation and mammary branching morphogenesis via binding to integrin β1. *Journal of Cell Science*, **2013**, 126, e1-e1	5.3
2	Living under Strain: How Epithelia Protect Their Genomes from Repeated Stretching. *Biochemistry*, **2020**, 59, 2761-2763	3.2
1	Tissue Architecture in Cancer Initiation and Progression **2022**, 91-107	