Peter W Zandstra

List of Publications by Year in Descending Order

135 papers	11,974 citations	56 h-index	109 g-index
146 ext. papers	13,685 ext. citations	11.3 avg, IF	6.32 L-index

#	Paper	IF	Citations
135	Multi-objective optimization reveals time- and dose-dependent inflammatory cytokine-mediated regulation of human stem cell derived T-cell development.. *Npj Regenerative Medicine*, **2022**, 7, 11	15.8	1
134	IQCELL: A platform for predicting the effect of gene perturbations on developmental trajectories using single-cell RNA-seq data.. *PLoS Computational Biology*, **2022**, 18, e1009907	5	3
133	Microdroplet-based one-step RT-PCR for ultrahigh throughput single-cell multiplex gene expression analysis and rare cell detection. *Scientific Reports*, **2021**, 11, 6777	4.9	2
132	Endogenous suppression of WNT signalling in human embryonic stem cells leads to low differentiation propensity towards definitive endoderm. *Scientific Reports*, **2021**, 11, 6137	4.9	1
131	A 96-well culture platform enables longitudinal analyses of engineered human skeletal muscle microtissue strength. *Scientific Reports*, **2020**, 10, 6918	4.9	34
130	Functional arrays of human pluripotent stem cell-derived cardiac microtissues. *Scientific Reports*, **2020**, 10, 6919	4.9	14
129	Hematopoietic stem cell transplantation using single UM171-expanded cord blood: a single-arm, phase 1-2 safety and feasibility study. *Lancet Haematology,the*, **2020**, 7, e134-e145	14.6	67
128	Context-explorer: Analysis of spatially organized protein expression in high-throughput screens. *PLoS Computational Biology*, **2019**, 15, e1006384	5	7
127	Human Embryonic Stem Cell-Derived Cardiomyocytes Regenerate the Infarcted Pig Heart but Induce Ventricular Tachyarrhythmias. *Stem Cell Reports*, **2019**, 12, 967-981	8	127
126	Cell competition during reprogramming gives rise to dominant clones. *Science*, **2019**, 364,	33.3	51
125	Identifying Extrinsic versus Intrinsic Drivers of Variation in Cell Behavior in Human iPSC Lines from Healthy Donors. *Cell Reports*, **2019**, 26, 2078-2087.e3	10.6	16
124	High-throughput micropatterning platform reveals Nodal-dependent bisection of peri-gastrulation-associated versus preneurulation-associated fate patterning. *PLoS Biology*, **2019**, 17, e3000081	9.7	17
123	Chemically controlled aggregation of pluripotent stem cells. *Biotechnology and Bioengineering*, **2018**, 115, 2061-2066	4.9	14
122	Modeling signaling-dependent pluripotency with Boolean logic to predict cell fate transitions. *Molecular Systems Biology*, **2018**, 14, e7952	12.2	29
121	A Myc enhancer cluster regulates normal and leukaemic haematopoietic stem cell hierarchies. *Nature*, **2018**, 553, 515-520	50.4	142
120	FZD4 Marks Lateral Plate Mesoderm and Signals with NORRIN to Increase Cardiomyocyte Induction from Pluripotent Stem Cell-Derived Cardiac Progenitors. *Stem Cell Reports*, **2018**, 10, 87-100	8	15
119	Convenience versus Biological Significance: Are PMA-Differentiated THP-1 Cells a Reliable Substitute for Blood-Derived Macrophages When Studying Polarization?. *Frontiers in Pharmacology*, **2018**, 9, 71	5.6	84

118	Stem cell bioengineering: building from stem cell biology. *Nature Reviews Genetics*, **2018**, 19, 595-614	30.1	51
117	Modulating cell state to enhance suspension expansion of human pluripotent stem cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 6369-6374	11.5	18
116	Single UM171 Expanded Cord Blood Permits Transplantation of Better HLA Matched Cords with Excellent Gvhd Relapse Free Survival. *Blood*, **2018**, 132, 4658-4658	2.2	3
115	Mechanics-guided developmental fate patterning. *Nature Materials*, **2018**, 17, 571-572	27	2
114	Engineering a humanized bone organ model in mice to study bone metastases. *Nature Protocols*, **2017**, 12, 639-663	18.8	74
113	Progenitor T-cell differentiation from hematopoietic stem cells using Delta-like-4 and VCAM-1. *Nature Methods*, **2017**, 14, 531-538	21.6	70
112	Steric Hindrance Assay for Secreted Factors in Stem Cell Culture. *ACS Sensors*, **2017**, 2, 495-500	9.2	11
111	Engineering the haemogenic niche mitigates endogenous inhibitory signals and controls pluripotent stem cell-derived blood emergence. *Nature Communications*, **2017**, 8, 15380	17.4	16
110	Engineering cell fitness: lessons for regenerative medicine. *Current Opinion in Biotechnology*, **2017**, 47, 7-15	11.4	14
109	Achieving Efficient Manufacturing and Quality Assurance through Synthetic Cell Therapy Design. *Cell Stem Cell*, **2017**, 20, 13-17	18	26
108	A stepwise model of reaction-diffusion and positional information governs self-organized human peri-gastrulation-like patterning. *Development (Cambridge)*, **2017**, 144, 4298-4312	6.6	84
107	Synthetic gene circuits and cellular decision-making in human pluripotent stem cells. *Current Opinion in Systems Biology*, **2017**, 5, 93-103	3.2	17
106	Enhanced human hematopoietic stem and progenitor cell engraftment by blocking donor T cell-mediated TNF signaling. *Science Translational Medicine*, **2017**, 9,	17.5	15
105	Proneurogenic Ligands Defined by Modeling Developing Cortex Growth Factor Communication Networks. *Neuron*, **2016**, 91, 988-1004	13.9	28
104	Distinguishing autocrine and paracrine signals in hematopoietic stem cell culture using a biofunctional microcavity platform. *Scientific Reports*, **2016**, 6, 31951	4.9	24
103	Signaling Networks among Stem Cell Precursors, Transit-Amplifying Progenitors, and their Niche in Developing Hair Follicles. *Cell Reports*, **2016**, 14, 3001-18	10.6	98
102	miR-126 Regulates Distinct Self-Renewal Outcomes in Normal and Malignant Hematopoietic Stem Cells. *Cancer Cell*, **2016**, 29, 214-28	24.3	118
101	Two-dimensional arrays of cell-laden polymer hydrogel modules. *Biomicrofluidics*, **2016**, 10, 014110	3.2	10

100	A 17-gene stemness score for rapid determination of risk in acute leukaemia. *Nature*, **2016**, 540, 433-437	50.4	369
99	Quality cell therapy manufacturing by design. *Nature Biotechnology*, **2016**, 34, 393-400	44.5	150
98	CD24 tracks divergent pluripotent states in mouse and human cells. *Nature Communications*, **2015**, 6, 7329	17.4	56
97	LIF signaling in stem cells and development. *Development (Cambridge)*, **2015**, 142, 2230-6	6.6	73
96	Human pluripotent stem cell process parameter optimization in a small scale suspension bioreactor. *BMC Proceedings*, **2015**, 9, O10	2.3	3
95	Proportional-Integral-Derivative (PID) Control of Secreted Factors for Blood Stem Cell Culture. *PLoS ONE*, **2015**, 10, e0137392	3.7	9
94	The microwell-mesh: A novel device and protocol for the high throughput manufacturing of cartilage microtissues. *Biomaterials*, **2015**, 62, 1-12	15.6	52
93	Bringing Blood Stem Cell Phenotype, Genotype, and Function Closer Together. *Cell Stem Cell*, **2015**, 16, 574-5	18	
92	Stem cells: Chasing blood. *Nature*, **2015**, 518, 488-90	50.4	3
91	A mass spectrometric-derived cell surface protein atlas. *PLoS ONE*, **2015**, 10, e0121314	3.7	199
90	A global assessment of stem cell engineering. *Tissue Engineering - Part A*, **2014**, 20, 2575-89	3.9	5
89	Real-time monitoring and control of soluble signaling factors enables enhanced progenitor cell outputs from human cord blood stem cell cultures. *Biotechnology and Bioengineering*, **2014**, 111, 1258-64	4.9	12
88	Intercellular network structure and regulatory motifs in the human hematopoietic system. *Molecular Systems Biology*, **2014**, 10, 741	12.2	41
87	Cord blood expansion. Pyrimidoindole derivatives are agonists of human hematopoietic stem cell self-renewal. *Science*, **2014**, 345, 1509-12	33.3	339
86	Computational Modeling and Stem Cell Engineering. *Science Policy Reports*, **2014**, 65-97		
85	Blood stem cell fate regulation by Delta-1-mediated rewiring of IL-6 paracrine signaling. *Blood*, **2014**, 123, 650-8	2.2	21
84	Local BMP-SMAD1 signaling increases LIF receptor-dependent STAT3 responsiveness and primed-to-naive mouse pluripotent stem cell conversion frequency. *Stem Cell Reports*, **2014**, 3, 156-68	8	13
83	Transforming the promise of pluripotent stem cell-derived cardiomyocytes to a therapy: challenges and solutions for clinical trials. *Canadian Journal of Cardiology*, **2014**, 30, 1335-49	3.8	23

82	Genome-wide characterization of the routes to pluripotency. *Nature*, **2014**, 516, 198-206	50.4	153
81	High-throughput fingerprinting of human pluripotent stem cell fate responses and lineage bias. *Nature Methods*, **2013**, 10, 1225-31	21.6	51
80	Blood stem cell products: toward sustainable benchmarks for clinical translation. *BioEssays*, **2013**, 35, 201-10	4.1	14
79	High density continuous production of murine pluripotent cells in an acoustic perfused bioreactor at different oxygen concentrations. *Biotechnology and Bioengineering*, **2013**, 110, 648-55	4.9	35
78	Integrative network analysis of signaling in human CD34(+) hematopoietic progenitor cells by global phosphoproteomic profiling using TiO2 enrichment combined with 2D LC-MS/MS and pathway mapping. *Proteomics*, **2013**, 13, 1325-33	4.8	12
77	Design and formulation of functional pluripotent stem cell-derived cardiac microtissues. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E4698-707	11.5	209
76	Systematic engineering of 3D pluripotent stem cell niches to guide blood development. *Biomaterials*, **2012**, 33, 1271-80	15.6	41
75	Rapid expansion of human hematopoietic stem cells by automated control of inhibitory feedback signaling. *Cell Stem Cell*, **2012**, 10, 218-29	18	194
74	Derivation, expansion and differentiation of induced pluripotent stem cells in continuous suspension cultures. *Nature Methods*, **2012**, 9, 509-16	21.6	84
73	Tissue engineering 2.0: guiding self-organization during pluripotent stem cell differentiation. *Current Opinion in Biotechnology*, **2012**, 23, 810-9	11.4	28
72	Microenvironment-mediated reversion of epiblast stem cells by reactivation of repressed JAK-STAT signaling. *Integrative Biology (United Kingdom)*, **2012**, 4, 1367-76	3.7	12
71	PERT: a method for expression deconvolution of human blood samples from varied microenvironmental and developmental conditions. *PLoS Computational Biology*, **2012**, 8, e1002838	5	84
70	Predictive microfluidic control of regulatory ligand trajectories in individual pluripotent cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 3264-9	11.5	56
69	A microfabricated platform to measure and manipulate the mechanics of engineered cardiac microtissues. *Tissue Engineering - Part A*, **2012**, 18, 910-9	3.9	289
68	Engineering the Pluripotent Stem Cell Niche for Directed Mesoderm Differentiation **2012**, 1-26		
67	High-throughput combinatorial cell co-culture using microfluidics. *Integrative Biology (United Kingdom)*, **2011**, 3, 653-62	3.7	162
66	An alternative splicing switch regulates embryonic stem cell pluripotency and reprogramming. *Cell*, **2011**, 147, 132-46	56.2	253
65	Engineered heart tissue enables study of residual undifferentiated embryonic stem cell activity in a cardiac environment. *Biotechnology and Bioengineering*, **2011**, 108, 704-19	4.9	20

64	Incorporation of biomaterials in multicellular aggregates modulates pluripotent stem cell differentiation. *Biomaterials*, **2011**, 32, 48-56	15.6	134
63	High-throughput generation of hydrogel microbeads with varying elasticity for cell encapsulation. *Biomaterials*, **2011**, 32, 1477-83	15.6	162
62	Geometric control of cardiomyogenic induction in human pluripotent stem cells. *Tissue Engineering - Part A*, **2011**, 17, 1901-9	3.9	71
61	Enhanced Human Hematopoietic Stem Cell Self-Renewal Enabled by Controlling Feedback Signaling From Lineage Committed Cells. *Blood*, **2011**, 118, 1274-1274	2.2	1
60	Immobilization of growth factors on solid supports for the modulation of stem cell fate. *Nature Protocols*, **2010**, 5, 1042-50	18.8	49
59	Enabling stem cell therapies through synthetic stem cell-niche engineering. *Journal of Clinical Investigation*, **2010**, 120, 60-70	15.9	132
58	Synthetic peptide arrays for pathway-level protein monitoring by liquid chromatography-tandem mass spectrometry. *Molecular and Cellular Proteomics*, **2010**, 9, 2460-73	7.6	12
57	Interrogating functional integration between injected pluripotent stem cell-derived cells and surrogate cardiac tissue. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 3329-34	11.5	74
56	Dynamic interaction networks in a hierarchically organized tissue. *Molecular Systems Biology*, **2010**, 6, 417	12.2	104
55	The AC133+CD38-, but not the rhodamine-low, phenotype tracks LTC-IC and SRC function in human cord blood ex vivo expansion cultures. *Blood*, **2010**, 115, 257-60	2.2	11
54	The use of vascular endothelial growth factor functionalized agarose to guide pluripotent stem cell aggregates toward blood progenitor cells. *Biomaterials*, **2010**, 31, 8262-70	15.6	60
53	Cell-cell interaction networks regulate blood stem and progenitor cell fate. *Molecular Systems Biology*, **2009**, 5, 293	12.2	92
52	Generation of human embryonic stem cell-derived mesoderm and cardiac cells using size-specified aggregates in an oxygen-controlled bioreactor. *Biotechnology and Bioengineering*, **2009**, 102, 493-507	4.9	188
51	An automated system for delivery of an unstable transcription factor to hematopoietic stem cell cultures. *Biotechnology and Bioengineering*, **2009**, 103, 402-12	4.9	10
50	Growth factors, matrices, and forces combine and control stem cells. *Science*, **2009**, 324, 1673-7	33.3	2065
49	Manipulation of signaling thresholds in "engineered stem cell niches" identifies design criteria for pluripotent stem cell screens. *PLoS ONE*, **2009**, 4, e6438	3.7	60
48	Enhancement of Soluble Transcription Factor (TAT-HOXB4 and TAT-NUP98HOXA10HD) - Mediated Human Hematopoietic Stem Cell Self-Renewal by Minimizing Inhibitory Endogenous Signalling.. *Blood*, **2009**, 114, 1493-1493	2.2	
47	TAZ controls Smad nucleocytoplasmic shuttling and regulates human embryonic stem-cell self-renewal. *Nature Cell Biology*, **2008**, 10, 837-48	23.4	482

46	Functional immobilization of signaling proteins enables control of stem cell fate. *Nature Methods*, **2008**, 5, 645-50	21.6	180
45	Analysis of the temporal and concentration-dependent effects of BMP-4, VEGF, and TPO on development of embryonic stem cell-derived mesoderm and blood progenitors in a defined, serum-free media. *Experimental Hematology*, **2008**, 36, 1186-98	3.1	23
44	The systematic production of cells for cell therapies. *Cell Stem Cell*, **2008**, 3, 369-81	18	240
43	Seeding bioreactor-produced embryonic stem cell-derived cardiomyocytes on different porous, degradable, polyurethane scaffolds reveals the effect of scaffold architecture on cell morphology. *Tissue Engineering - Part A*, **2008**, 14, 369-78	3.9	57
42	Reproducible, ultra high-throughput formation of multicellular organization from single cell suspension-derived human embryonic stem cell aggregates. *PLoS ONE*, **2008**, 3, e1565	3.7	329
41	Control of human embryonic stem cell colony and aggregate size heterogeneity influences differentiation trajectories. *Stem Cells*, **2008**, 26, 2300-10	5.8	361
40	Soluble Flt-1 regulates Flk-1 activation to control hematopoietic and endothelial development in an oxygen-responsive manner. *Stem Cells*, **2008**, 26, 2832-42	5.8	30
39	Engineering cardiac healing using embryonic stem cell-derived cardiac cell seeded constructs. *Frontiers in Bioscience - Landmark*, **2007**, 12, 3694-712	2.8	9
38	LIF-mediated control of embryonic stem cell self-renewal emerges due to an autoregulatory loop. *FASEB Journal*, **2007**, 21, 2020-32	0.9	59
37	Sensitivity analysis of intracellular signaling pathway kinetics predicts targets for stem cell fate control. *PLoS Computational Biology*, **2007**, 3, e130	5	48
36	Prediction and testing of novel transcriptional networks regulating embryonic stem cell self-renewal and commitment. *Cell Stem Cell*, **2007**, 1, 71-86	18	81
35	Niche-mediated control of human embryonic stem cell self-renewal and differentiation. *EMBO Journal*, **2007**, 26, 4744-55	13	327
34	Phenotypic analysis of human embryonic stem cells. *Current Protocols in Stem Cell Biology*, **2007**, Chapter 1, Unit 1B.3	2.8	14
33	Spatial organization of embryonic stem cell responsiveness to autocrine gp130 ligands reveals an autoregulatory stem cell niche. *Stem Cells*, **2006**, 24, 2538-48	5.8	51
32	Clinically relevant expansion of hematopoietic stem cells with conserved function in a single-use, closed-system bioprocess. *Biology of Blood and Marrow Transplantation*, **2006**, 12, 1020-30	4.7	46
31	Understanding cellular networks to improve hematopoietic stem cell expansion cultures. *Current Opinion in Biotechnology*, **2006**, 17, 538-47	11.4	31
30	Clonal evolution of stem and differentiated cells can be predicted by integrating cell-intrinsic and -extrinsic parameters. *Biotechnology and Applied Biochemistry*, **2005**, 42, 119-31	2.8	16
29	Scalable production of embryonic stem cell-derived cells. *Methods in Molecular Biology*, **2005**, 290, 353-64	4.4	24

28	Shear-controlled single-step mouse embryonic stem cell expansion and embryoid body-based differentiation. *Stem Cells*, **2005**, 23, 1333-42	5.8	203
27	Dynamic changes in cellular and microenvironmental composition can be controlled to elicit in vitro human hematopoietic stem cell expansion. *Experimental Hematology*, **2005**, 33, 1229-39	3.1	56
26	Development of a perfusion fed bioreactor for embryonic stem cell-derived cardiomyocyte generation: oxygen-mediated enhancement of cardiomyocyte output. *Biotechnology and Bioengineering*, **2005**, 90, 452-61	4.9	132
25	Multivariate proteomic analysis of murine embryonic stem cell self-renewal versus differentiation signaling. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 2900-5	11.5	99
24	Sustained in vitro expansion of bone progenitors is cell density dependent. *Stem Cells*, **2004**, 22, 39-50	5.8	67
23	Controlled, scalable embryonic stem cell differentiation culture. *Stem Cells*, **2004**, 22, 275-82	5.8	245
22	Quantitative screening of embryonic stem cell differentiation: endoderm formation as a model. *Biotechnology and Bioengineering*, **2004**, 88, 287-98	4.9	36
21	Systematic Approach to the Development of Stem Cell Expansion Cultures **2004**, 663-676		
20	Signal processing underlying extrinsic control of stem cell fate. *Current Opinion in Hematology*, **2004**, 11, 95-101	3.3	17
19	Culture Conditions for Generating Human Bone Marrow Stromal Cells Influence Cell Immunophenotype and In Vivo Biodistribution in Immune Deficient Mice.. *Blood*, **2004**, 104, 2334-2334	2.2	1
18	Two-color image analysis discriminates between mineralized and unmineralized bone nodules in vitro. *BioTechniques*, **2003**, 34, 1188-92, 1194, 1196 passim	2.5	9
17	Towards predictive models of stem cell fate. *Cytotechnology*, **2003**, 41, 75-92	2.2	40
16	Fluorescence activated cell sorting reveals heterogeneous and cell non-autonomous osteoprogenitor differentiation in fetal rat calvaria cell populations. *Journal of Cellular Biochemistry*, **2003**, 90, 109-20	4.7	16
15	Supplementation-dependent differences in the rates of embryonic stem cell self-renewal, differentiation, and apoptosis. *Biotechnology and Bioengineering*, **2003**, 84, 505-17	4.9	42
14	Scalable production of embryonic stem cell-derived cardiomyocytes. *Tissue Engineering*, **2003**, 9, 767-78		252
13	Efficiency of embryoid body formation and hematopoietic development from embryonic stem cells in different culture systems. *Biotechnology and Bioengineering*, **2002**, 78, 442-53	4.9	301
12	Ligand/receptor signaling threshold (LIST) model accounts for gp130-mediated embryonic stem cell self-renewal responses to LIF and HIL-6. *Stem Cells*, **2002**, 20, 119-38	5.8	79
11	Stem cell bioengineering. *Annual Review of Biomedical Engineering*, **2001**, 3, 275-305	12	110

10	A ligand-receptor signaling threshold model of stem cell differentiation control: a biologically conserved mechanism applicable to hematopoiesis. *Blood*, **2000**, 96, 1215-1222	2.2	94
9	Environmental Requirements of Hematopoietic Progenitor Cells in Ex Vivo Expansion Systems **1999**, 245-272		5
8	Advances in hematopoietic stem cell culture. *Current Opinion in Biotechnology*, **1998**, 9, 146-51	11.4	31
7	Expansion of hematopoietic progenitor cell populations in stirred suspension bioreactors of normal human bone marrow cells. *Nature Biotechnology*, **1994**, 12, 909-14	44.5	73
6	A defined platform of human peri-gastrulation-like biological fate patterning reveals coordination between Reaction-Diffusion and Positional-Information		3
5	High-throughput micro-patterning platform reveals Nodal-dependent dissection of peri-gastrulation-associated versus pre-neurulation associated fate patterning		1
4	Functional arrays of human pluripotent stem cell-derived cardiac microtissues		3
3	Modeling signaling-dependent pluripotent cell states with boolean logic can predict cell fate transitions		1
2	IQCELL: A platform for predicting the effect of gene perturbations on developmental trajectories using single-cell RNA-seq data		1
1	Process evolution in cell and gene therapy from discovery to commercialization. *Canadian Journal of Chemical Engineering*,	2.3	1