Anne E Carpenter

List of Publications by Citations

164	18,858	61	137
papers	citations	h-index	g-index
190	23,708	11.3	6.52
ext. papers	ext. citations	avg, IF	L-index

#	Paper	IF	Citations
164	CellProfiler: image analysis software for identifying and quantifying cell phenotypes. *Genome Biology*, **2006**, 7, R100	18.3	3203
163	A lentiviral RNAi library for human and mouse genes applied to an arrayed viral high-content screen. *Cell*, **2006**, 124, 1283-98	56.2	1340
162	Opportunities and obstacles for deep learning in biology and medicine. *Journal of the Royal Society Interface*, **2018**, 15,	4.1	780
161	CellProfiler 3.0: Next-generation image processing for biology. *PLoS Biology*, **2018**, 16, e2005970	9.7	775
160	mTOR complex 1 regulates lipin 1 localization to control the SREBP pathway. *Cell*, **2011**, 146, 408-20	56.2	774
159	Improved structure, function and compatibility for CellProfiler: modular high-throughput image analysis software. *Bioinformatics*, **2011**, 27, 1179-80	7.2	741
158	CellProfiler: free, versatile software for automated biological image analysis. *BioTechniques*, **2007**, 42, 71-5	2.5	633
157	Long-range directional movement of an interphase chromosome site. *Current Biology*, **2006**, 16, 825-31	6.3	444
156	In germ cells of mouse embryonic ovaries, the decision to enter meiosis precedes premeiotic DNA replication. *Nature Genetics*, **2006**, 38, 1430-4	36.3	390
155	Biological imaging software tools. *Nature Methods*, **2012**, 9, 697-710	21.6	377
154	CellProfiler Analyst: data exploration and analysis software for complex image-based screens. *BMC Bioinformatics*, **2008**, 9, 482	3.6	375
153	An algorithm-based topographical biomaterials library to instruct cell fate. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 16565-70	11.5	310
152	Data-analysis strategies for image-based cell profiling. *Nature Methods*, **2017**, 14, 849-863	21.6	291
151	Scoring diverse cellular morphologies in image-based screens with iterative feedback and machine learning. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 1826-31	11.5	290
150	Cell Painting, a high-content image-based assay for morphological profiling using multiplexed fluorescent dyes. *Nature Protocols*, **2016**, 11, 1757-74	18.8	286
149	Systematic genome-wide screens of gene function. *Nature Reviews Genetics*, **2004**, 5, 11-22	30.1	261
148	Annotated high-throughput microscopy image sets for validation. *Nature Methods*, **2012**, 9, 637	21.6	230

147	The bromodomain protein Brd4 insulates chromatin from DNA damage signalling. *Nature*, **2013**, 498, 246-50	50.4	214
146	Identification of small molecules for human hepatocyte expansion and iPS differentiation. *Nature Chemical Biology*, **2013**, 9, 514-20	11.7	201
145	Cell microarrays and RNA interference chip away at gene function. *Nature Genetics*, **2005**, 37 Suppl, S25-30	36.3	193
144	Visualization of image data from cells to organisms. *Nature Methods*, **2010**, 7, S26-41	21.6	189
143	Identification of host-targeted small molecules that restrict intracellular Mycobacterium tuberculosis growth. *PLoS Pathogens*, **2014**, 10, e1003946	7.6	172
142	The Spemann organizer gene, Goosecoid, promotes tumor metastasis. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 18969-74	11.5	172
141	Abnormalities in mitochondrial structure in cells from patients with bipolar disorder. *American Journal of Pathology*, **2010**, 177, 575-85	5.8	170
140	High-throughput screen for novel antimicrobials using a whole animal infection model. *ACS Chemical Biology*, **2009**, 4, 527-33	4.9	167
139	Nucleus segmentation across imaging experiments: the 2018 Data Science Bowl. *Nature Methods*, **2019**, 16, 1247-1253	21.6	165
138	BRCA1-induced large-scale chromatin unfolding and allele-specific effects of cancer-predisposing mutations. *Journal of Cell Biology*, **2001**, 155, 911-21	7.3	164
137	Human tumors instigate granulin-expressing hematopoietic cells that promote malignancy by activating stromal fibroblasts in mice. *Journal of Clinical Investigation*, **2011**, 121, 784-99	15.9	161
136	Label-free cell cycle analysis for high-throughput imaging flow cytometry. *Nature Communications*, **2016**, 7, 10256	17.4	156
135	A microscale human liver platform that supports the hepatic stages of Plasmodium falciparum and vivax. *Cell Host and Microbe*, **2013**, 14, 104-15	23.4	152
134	In vivo HP1 targeting causes large-scale chromatin condensation and enhanced histone lysine methylation. *Molecular and Cellular Biology*, **2005**, 25, 4552-64	4.8	147
133	Toward performance-diverse small-molecule libraries for cell-based phenotypic screening using multiplexed high-dimensional profiling. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 10911-6	11.5	141
132	Reconstructing cell cycle and disease progression using deep learning. *Nature Communications*, **2017**, 8, 463	17.4	136
131	Increasing the Content of High-Content Screening: An Overview. *Journal of Biomolecular Screening*, **2014**, 19, 640-50		136
130	Multiplex cytological profiling assay to measure diverse cellular states. *PLoS ONE*, **2013**, 8, e80999	3.7	136

129   Ligand-mediated assembly and real-time cellular dynamics of estrogen receptor alpha-coactivator complexes in living cells. *Molecular and Cellular Biology*, **2001**, 21, 4404-12   4.8   129

128   Genetic architecture of Hsp90-dependent drug resistance. *Eukaryotic Cell*, **2006**, 5, 2184-8   126

127   Image-based chemical screening. *Nature Chemical Biology*, **2007**, 3, 461-5   11.7   124

126   RNAi living-cell microarrays for loss-of-function screens in Drosophila melanogaster cells. *Nature Methods*, **2004**, 1, 127-32   21.6   123

125   Dynamic proteomics in individual human cells uncovers widespread cell-cycle dependence of nuclear proteins. *Nature Methods*, **2006**, 3, 525-31   21.6   117

124   Microarrays of lentiviruses for gene function screens in immortalized and primary cells. *Nature Methods*, **2006**, 3, 117-22   21.6   115

123   Large-scale chromatin structure and function. *Current Opinion in Cell Biology*, **1999**, 11, 307-11   9   114

122   Comparison of methods for image-based profiling of cellular morphological responses to small-molecule treatment. *Journal of Biomolecular Screening*, **2013**, 18, 1321-9   113

121   An image analysis toolbox for high-throughput C. elegans assays. *Nature Methods*, **2012**, 9, 714-6   21.6   112

120   Imagining the future of bioimage analysis. *Nature Biotechnology*, **2016**, 34, 1250-1255   44.5   108

119   Identification of regulators of polyploidization presents therapeutic targets for treatment of AMKL. *Cell*, **2012**, 150, 575-89   56.2   107

118   Evaluation of Deep Learning Strategies for Nucleus Segmentation in Fluorescence Images. *Cytometry Part A: the Journal of the International Society for Analytical Cytology*, **2019**, 95, 952-965   4.6   106

117   Repurposing High-Throughput Image Assays Enables Biological Activity Prediction for Drug Discovery. *Cell Chemical Biology*, **2018**, 25, 611-618.e3   8.2   104

116   Niche-based screening identifies small-molecule inhibitors of leukemia stem cells. *Nature Chemical Biology*, **2013**, 9, 840-848   11.7   96

115   Voronoi-Based Segmentation of Cells on Image Manifolds. *Lecture Notes in Computer Science*, **2005**, 535-543   95

114   Increased expression of the immune modulatory molecule PD-L1 (CD274) in anaplastic meningioma. *Oncotarget*, **2015**, 6, 4704-16   3.3   92

113   A call for bioimaging software usability. *Nature Methods*, **2012**, 9, 666-70   21.6   92

112   Applications in image-based profiling of perturbations. *Current Opinion in Biotechnology*, **2016**, 39, 134-142   12.4   87

111	Alteration of large-scale chromatin structure by estrogen receptor. *Molecular and Cellular Biology*, **2002**, 22, 3437-49	4.8	85
110	ZFHX4 interacts with the NuRD core member CHD4 and regulates the glioblastoma tumor-initiating cell state. *Cell Reports*, **2014**, 6, 313-24	10.6	77
109	Introduction to the quantitative analysis of two-dimensional fluorescence microscopy images for cell-based screening. *PLoS Computational Biology*, **2009**, 5, e1000603	5	75
108	CellProfiler Analyst: interactive data exploration, analysis and classification of large biological image sets. *Bioinformatics*, **2016**, 32, 3210-3212	7.2	72
107	Diagnostic Potential of Imaging Flow Cytometry. *Trends in Biotechnology*, **2018**, 36, 649-652	15.1	70
106	Workflow and metrics for image quality control in large-scale high-content screens. *Journal of Biomolecular Screening*, **2012**, 17, 266-74		68
105	Systematic morphological profiling of human gene and allele function via Cell Painting. *ELife*, **2017**, 6,	8.9	65
104	Distinctive actions of membrane-targeted versus nuclear localized estrogen receptors in breast cancer cells. *Molecular Endocrinology*, **2005**, 19, 1606-17		62
103	A dataset of images and morphological profiles of 30 000 small-molecule treatments using the Cell Painting assay. *GigaScience*, **2017**, 6, 1-5	7.6	59
102	Systematic, multiparametric analysis of Mycobacterium tuberculosis intracellular infection offers insight into coordinated virulence. *PLoS Pathogens*, **2017**, 13, e1006363	7.6	59
101	An open-source solution for advanced imaging flow cytometry data analysis using machine learning. *Methods*, **2017**, 112, 201-210	4.6	56
100	Common effects of acidic activators on large-scale chromatin structure and transcription. *Molecular and Cellular Biology*, **2005**, 25, 958-68	4.8	56
99	Mining for osteogenic surface topographies: In silico design to in vivo osseo-integration. *Biomaterials*, **2017**, 137, 49-60	15.6	49
98	Pipeline for illumination correction of images for high-throughput microscopy. *Journal of Microscopy*, **2014**, 256, 231-6	1.9	47
97	Small molecules discovered in a pathway screen target the Rho pathway in cytokinesis. *Nature Chemical Biology*, **2010**, 6, 457-63	11.7	47
96	Discovery of New Anti-Schistosomal Hits by Integration of QSAR-Based Virtual Screening and High Content Screening. *Journal of Medicinal Chemistry*, **2016**, 59, 7075-88	8.3	47
95	Regulation of nuclear receptor transcriptional activity by a novel DEAD box RNA helicase (DP97). *Journal of Biological Chemistry*, **2003**, 278, 4628-38	5.4	45
94	Opportunities and obstacles for deep learning in biology and medicine		45

93	Using CellProfiler for Automatic Identification and Measurement of Biological Objects in Images. *Current Protocols in Molecular Biology*, **2015**, 109, 14.17.1-14.17.13	2.9	44
92	Image-based profiling for drug discovery: due for a machine-learning upgrade?. *Nature Reviews Drug Discovery*, **2021**, 20, 145-159	64.1	43
91	CP-CHARM: segmentation-free image classification made accessible. *BMC Bioinformatics*, **2016**, 17, 51	3.6	42
90	A chemical screen probing the relationship between mitochondrial content and cell size. *PLoS ONE*, **2012**, 7, e33755	3.7	41
89	Visualization of parameter space for image analysis. *IEEE Transactions on Visualization and Computer Graphics*, **2011**, 17, 2402-11	4	40
88	A novel small molecule regulator of guanine nucleotide exchange activity of the ADP-ribosylation factor and golgi membrane trafficking. *Journal of Biological Chemistry*, **2008**, 283, 31087-96	5.4	39
87	QSAR-Driven Discovery of Novel Chemical Scaffolds Active against Schistosoma mansoni. *Journal of Chemical Information and Modeling*, **2016**, 56, 1357-72	6.1	38
86	High- and low-throughput scoring of fat mass and body fat distribution in C. elegans. *Methods*, **2014**, 68, 492-9	4.6	37
85	Applying Faster R-CNN for Object Detection on Malaria Images.. *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops*, **2017**, 2017, 808-813	1.3	36
84	CellProfiler 4: improvements in speed, utility and usability. *BMC Bioinformatics*, **2021**, 22, 433	3.6	36
83	Pharmacological HIF2 inhibition improves VHL disease-associated phenotypes in zebrafish model. *Journal of Clinical Investigation*, **2015**, 125, 1987-97	15.9	34
82	Label-Free Identification of White Blood Cells Using Machine Learning. *Cytometry Part A: the Journal of the International Society for Analytical Cytology*, **2019**, 95, 836-842	4.6	33
81	High content image analysis identifies novel regulators of synaptogenesis in a high-throughput RNAi screen of primary neurons. *PLoS ONE*, **2014**, 9, e91744	3.7	32
80	Genome-scale RNAi on living-cell microarrays identifies novel regulators of Drosophila melanogaster TORC1-S6K pathway signaling. *Genome Research*, **2011**, 21, 433-46	9.7	31
79	Quality Control for High-Throughput Imaging Experiments Using Machine Learning in Cellprofiler. *Methods in Molecular Biology*, **2018**, 1683, 89-112	1.4	28
78	Automating Morphological Profiling with Generic Deep Convolutional Networks		27
77	Leveraging machine vision in cell-based diagnostics to do more with less. *Nature Materials*, **2019**, 18, 414-418	27	26
76	Nanoparticle vesicle encoding for imaging and tracking cell populations. *Nature Methods*, **2014**, 11, 1177-81	28.1	26

75	Extracting rich information from images. *Methods in Molecular Biology*, **2009**, 486, 193-211	1.4	26
74	RESOLVING CLUSTERED WORMS VIA PROBABILISTIC SHAPE MODELS **2010**, 2010, 552-555	1.5	25
73	Quantifying co-cultured cell phenotypes in high-throughput using pixel-based classification. *Methods*, **2016**, 96, 6-11	4.6	24
72	CellProfiler Tracer: exploring and validating high-throughput, time-lapse microscopy image data. *BMC Bioinformatics*, **2015**, 16, 368	3.6	24
71	Using CellProfiler for automatic identification and measurement of biological objects in images. *Current Protocols in Molecular Biology*, **2008**, Chapter 14, Unit 14.17	2.9	24
70	Morphological Profiles of RNAi-Induced Gene Knockdown Are Highly Reproducible but Dominated by Seed Effects. *PLoS ONE*, **2015**, 10, e0131370	3.7	24
69	High-throughput screens for fluorescent dye discovery. *Trends in Biotechnology*, **2008**, 26, 527-30	15.1	22
68	Objective assessment of stored blood quality by deep learning. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 21381-21390	11.5	22
67	Label-Free Leukemia Monitoring by Computer Vision. *Cytometry Part A: the Journal of the International Society for Analytical Cytology*, **2020**, 97, 407-414	4.6	21
66	Open-source deep-learning software for bioimage segmentation. *Molecular Biology of the Cell*, **2021**, 32, 823-829	3.5	21
65	An intermittent live cell imaging screen for siRNA enhancers and suppressors of a kinesin-5 inhibitor. *PLoS ONE*, **2009**, 4, e7339	3.7	20
64	A deep learning framework for nucleus segmentation using image style transfer		20
63	Predicting cell health phenotypes using image-based morphology profiling. *Molecular Biology of the Cell*, **2021**, 32, 995-1005	3.5	20
62	An open-source computational tool to automatically quantify immunolabeled retinal ganglion cells. *Experimental Eye Research*, **2016**, 147, 50-56	3.7	18
61	Weakly Supervised Learning of Single-Cell Feature Embeddings. *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, **2018**, 2018, 9309-9318	6	18
60	A High-Content Screen Identifies TPP1 and Aurora B as Regulators of Axonal Mitochondrial Transport. *Cell Reports*, **2019**, 28, 3224-3237.e5	10.6	17
59	Ultrasome: efficient aberration caller for copy number studies of ultra-high resolution. *Bioinformatics*, **2009**, 25, 1078-9	7.2	17
58	Evaluation of Deep Learning Strategies for Nucleus Segmentation in Fluorescence Images		17

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57	Capturing single-cell heterogeneity via data fusion improves image-based profiling. *Nature Communications*, **2019**, 10, 2082	17.4	16
56	Screening cellular feature measurements for image-based assay development. *Journal of Biomolecular Screening*, **2010**, 15, 840-6		16
55	CytoGAN: Generative Modeling of Cell Images		16
54	Keras R-CNN: library for cell detection in biological images using deep neural networks. *BMC Bioinformatics*, **2020**, 21, 300	3.6	15
53	The antidepressant drug paroxetine as a new lead candidate in schistosome drug discovery. *MedChemComm*, **2016**, 7, 1176-1182	5	12
52	Scientific Community Image Forum: A discussion forum for scientific image software. *PLoS Biology*, **2019**, 17, e3000340	9.7	10
51	Designed Surface Topographies Control ICAM-1 Expression in Tonsil-Derived Human Stromal Cells. *Frontiers in Bioengineering and Biotechnology*, **2018**, 6, 87	5.8	10
50	Weakly Supervised Learning of Single-Cell Feature Embeddings		10
49	DoGNet: A deep architecture for synapse detection in multiplexed fluorescence images. *PLoS Computational Biology*, **2019**, 15, e1007012	5	9
48	Artificial intelligence and cancer.. *Nature Cancer*, **2020**, 1, 149-152	15.4	9
47	On the correlation between material-induced cell shape and phenotypical response of human mesenchymal stem cells. *Scientific Reports*, **2020**, 10, 18988	4.9	9
46	BIN1 protein isoforms are differentially expressed in astrocytes, neurons, and microglia: neuronal and astrocyte BIN1 are implicated in tau pathology. *Molecular Neurodegeneration*, **2020**, 15, 44	19	9
45	High-Throughput Platform for Identifying Molecular Factors Involved in Phenotypic Stabilization of Primary Human Hepatocytes In Vitro. *Journal of Biomolecular Screening*, **2016**, 21, 897-911		7
44	ProtocolNavigator: emulation-based software for the design, documentation and reproduction biological experiments. *Bioinformatics*, **2014**, 30, 3440-2	7.2	7
43	Direct visualization of transcription factor-induced chromatin remodeling and cofactor recruitment in vivo. *Methods in Enzymology*, **2004**, 375, 366-81	1.7	7
42	CellProfiler Analyst 3.0: Accessible data exploration and machine learning for image analysis. *Bioinformatics*, **2021**,	7.2	7
41	Predicting cell health phenotypes using image-based morphology profiling		6
40	Predicting compound activity from phenotypic profiles and chemical structures		6

#	Reference		
39	High-Throughput, Automated Image Processing for Large-Scale Fluorescence Microscopy Experiments. *Microscopy and Microanalysis*, **2016**, 22, 538-539	0.5	6
38	Genes in human obesity loci are causal obesity genes in C. elegans. *PLoS Genetics*, **2021**, 17, e1009736	6	6
37	CDy6, a photostable probe for long-term real-time visualization of mitosis and proliferating cells. *Chemistry and Biology*, **2015**, 22, 299-307		5
36	Correction for Unadkat et al., An algorithm-based topographical biomaterials library to instruct cell fate. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 5905-5905	11.5	5
35	Automated microscopy identifies estrogen receptor subdomains with large-scale chromatin structure unfolding activity. *Cytometry*, **2004**, 58, 157-66		5
34	Functional immune mapping with deep-learning enabled phenomics applied to immunomodulatory and COVID-19 drug discovery		5
33	ImageJ and CellProfiler: Complements in Open-Source Bioimage Analysis. *Current Protocols*, **2021**, 1, e89		5
32	High-Dimensional Gene Expression and Morphology Profiles of Cells across 28,000 Genetic and Chemical Perturbations		5
31	Morphology and gene expression profiling provide complementary information for mapping cell state		4
30	Reconstructing cell cycle and disease progression using deep learning		4
29	A Genome-wide RNAi Screen for Microtubule Bundle Formation and Lysosome Motility Regulation in Drosophila S2 Cells. *Cell Reports*, **2016**, 14, 611-620	10.6	3
28	2020 BioImage Analysis Survey: Community experiences and needs for the future. **2022**, 1,		3
27	Capturing single-cell heterogeneity via data fusion improves image-based profiling		3
26	Identification and local delivery of vasodilators for the reduction of ureteral contractions. *Nature Biomedical Engineering*, **2020**, 4, 28-39	19	3
25	Developing open-source software for bioimage analysis: opportunities and challenges. *F1000Research*, **2021**, 10, 302	3.6	3
24	Deepometry, a framework for applying supervised and weakly supervised deep learning to imaging cytometry. *Nature Protocols*, **2021**, 16, 3572-3595	18.8	3
23	The new era of quantitative cell imaging-challenges and opportunities.. *Molecular Cell*, **2022**, 82, 241-247	17.6	2
22	Molecular Diversity of Glutamatergic and GABAergic Synapses from Multiplexed Fluorescence Imaging. *ENeuro*, **2021**, 8,	3.9	2

21	A field guide to cultivating computational biology. *PLoS Biology*, **2021**, 19, e3001419	9.7	2
20	Inter-laboratory automation of the in vitro micronucleus assay using imaging flow cytometry and deep learning. *Archives of Toxicology*, **2021**, 95, 3101-3115	5.8	2
19	Predicting drug polypharmacology from cell morphology readouts using variational autoencoder latent space arithmetic.. *PLoS Computational Biology*, **2022**, 18, e1009888	5	2
18	Automated image-based assay for evaluation of HIV neutralization and cell-to-cell fusion inhibition. *BMC Infectious Diseases*, **2014**, 14, 472	4	1
17	Automated tracking of yeast cell lineages **2010**,		1
16	EXTRACTING BIOMEDICALLY IMPORTANT INFORMATION FROM LARGE, AUTOMATED IMAGING EXPERIMENTS **2011**, 1723-1726	1.5	1
15	Repurposed high-throughput images enable biological activity prediction for drug discovery		1
14	Cell Painting, an image-based assay for morphological profiling		1
13	High-content, label-free analysis of proplatelet production from megakaryocytes. *Journal of Thrombosis and Haemostasis*, **2020**, 18, 2701-2711	15.4	1
12	Resolving cell state in iPSC-derived human neural samples with multiplexed fluorescence imaging. *Communications Biology*, **2021**, 4, 786	6.7	1
11	CellProfiler 4: Improvements in Speed, Utility and Usability		1
10	Combining morphological and migration profiles of in vitro time-lapse data **2018**,		1
9	Cell Painting predicts impact of lung cancer variants.. *Molecular Biology of the Cell*, **2022**, mbcE21110538	3.5	1
8	A Multiparametric Activity Profiling Platform for Neuron Disease Phenotyping and Drug Screening.. *Molecular Biology of the Cell*, **2021**, mbcE21100481	3.5	0
7	A New Image for Cell Sorting.. *New England Journal of Medicine*, **2022**, 386, 1755-1758	59.2	0
6	CellProfiler: Open-Source Software to Automatically Quantify Images. *Microscopy Today*, **2008**, 16, 38-39	0.4	
5	A Kinome shRNA Screen to Identify Pathways That Regulate Megakaryocyte Polyploidization and New Targets for Differentiation Therapy. *Blood*, **2010**, 116, 89-89	2.2	
4	Distinct Metabolic Dependency of Normal and Leukemic Cells in a Mouse Model. *Blood*, **2011**, 118, 759-759	2.2	

List of Publications

3 Niche-Based Screening Reveals Leukemia Stem Cell Specific Therapeutics. *Blood*, **2011**, 118, 760-760   2.2

2 Aldehyde Dehydrogenase 3a2 (Aldh3a2) Represents a Distinct Metabolic Vulnerability in MLL-AF9 AML Leukemia Initiating Cells. *Blood*, **2012**, 120, 208-208   2.2

1 A well-engineered path into cell biology and academia. *Molecular Biology of the Cell*, **2020**, 31, 2755-2756   3.5