

# Trends in biotech literature 2008

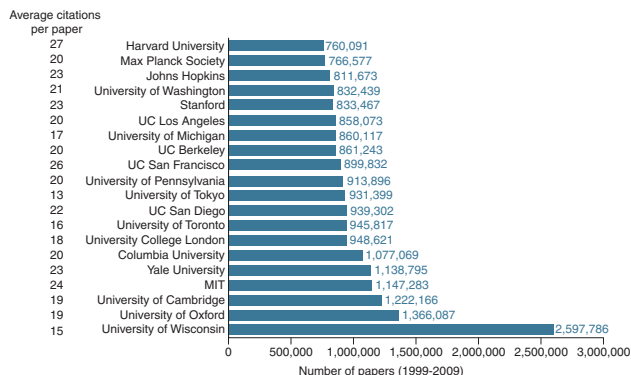
Andrew Marshall

The number of papers describing small RNAs continues to grow rapidly. Other fields, such as proteomics, nanotech and systems biology, continued to expand, but fewer papers were published on cancer stem cells in 2008 than in the previous 2 years. When looking at all scien-

tific fields from 1999–2009, Harvard continues to dominate in terms of output, with the Max Planck Society and Johns Hopkins second and third, respectively. China and India continue to increase their number of biotech papers, the latter leapfrogging Japan in output.

## Most cited institutions

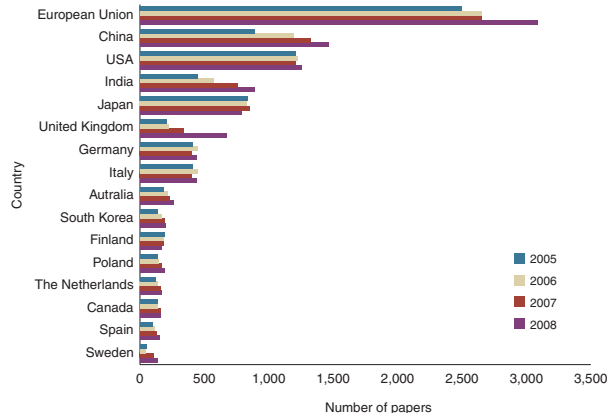
The top 20 institutions over all fields comprise 14 universities in the US, three in the UK, and one each in Canada, Japan and Germany



Source: Science Watch, Thomson

## Number of biotech journal articles by region

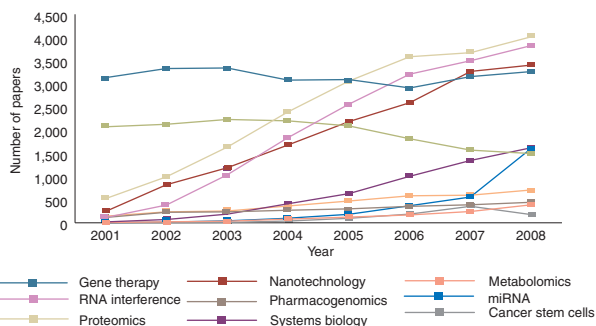
China and India continued their rapid growth, the latter overtaking Japan's output in papers.



Based on search for papers containing "biotechnology" in abstract. Source: National Center for Biotechnology Information's PubMed

## Historical trends in biotech fields

Proteomics, nanotech and RNAi continued rapid growth, with the increase in microRNA papers particularly pronounced. Cancer stem cell papers decreased.



Obtained using fields (for example, "proteomics") as search term in published papers. Source: National Center for Biotechnology Information's PubMed

## Biotech journal impact

Primary research journal	Impact factor
Nature Biotechnology	22.3
Nature Chemical Biology	14.6
Cell Stem Cell	12.3
Genome Research	10.2
Molecular Systems Biology	12.2
PNAS	9.4
Molecular and Cellular Proteomics	8.8
Clinical Pharmacology & Therapeutics	7.6
Review journal	Impact factor
Nature Reviews Drug Discovery	28.7
Pharmacological Reviews	21.9
Annual Review of Pharmacology	21.6
Annual Review of Biomedical Engineering	10.8
Current Opinion in Biotechnology	7.5
Trends in Biotechnology	6.6

Source: ISI

## Top cited paper by field

Field	Author	Title	Citation	Times cited
Genomic medicine	Burton, P.R. et al.	Genome-wide association study of 14,000 cases of seven common diseases and 3,000 shared controls	Nature 447, 661–678 (2007)	1,256
Epigenomics	Barski, A. et al.	High-resolution profiling of histone methylations in the human genome	Cell 129, 823–837 (2007)	466
iPS cells	Okita, K. et al.	Generation of germline-competent induced pluripotent stem cells	Nature 448, 313–317 (2007)	438
Cancer stem cells	O'Brien, C.A. et al.	A human colon cancer cell capable of initiating tumour growth in immunodeficient mice	Nature 445, 106–110 (2007)	414
Proteomics	Elias, J.E. & Gygi, S.P.	Target-decoy search strategy for increased confidence in large-scale protein identifications by mass spectrometry	Nature Methods 3, 207–214 (2007)	223
Environmental biotechnology	Rusch, D.B. et al.	The Sorcerer II Global Ocean Sampling expedition: Northwest Atlantic through Eastern Tropical Pacific	PLoS Biology 5, 398–431 (2007)	205
Diagnostics	Liu, R. et al.	The prognostic role of a gene signature from tumorigenic breast-cancer cells.	New England Journal of Medicine 356, 217–226 (2007)	198
Stem cells	De Coppi, P. et al.	Isolation of amniotic stem cell lines with potential for therapy	Nature Biotechnology 25, 100–106 (2007)	173
Plant biotech	Jaillon, O. et al.	The grapevine genome sequence suggests ancestral hexaploidization in major angiosperm phyla	Nature 449, 463–467 (2007)	173
Imaging	Lee, J.H. et al.	Artificially engineered magnetic nanoparticles for ultra-sensitive molecular imaging	Nature Medicine 13, 95–99 (2007)	141
Next-generation sequencing	Korbel, J.O. et al.	Paired-end mapping reveals extensive structural variation in the human genome	Science 318, 420–426 (2007)	136
Nanobiotechnology	Liu, Z. et al.	In vivo biodistribution and highly efficient tumour targeting of carbon nanotubes in mice	Nature Nanotechnology 2, 47–52 (2007)	120
Industrial biotechnology	Pel, H.J. et al.	Genome sequencing and analysis of the versatile cell factory Aspergillus niger CBS 513.88	Nature Biotechnology 25, 221–231 (2007)	116
Synthetic biology	Tumpey, T.M. et al.	A two-amino acid change in the haemagglutinin of the 1918 influenza virus abolishes transmission	Science 315, 655–659 (2007)	70

Source: ISI

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