



TRACKING TRENDS AND PERFORMANCE IN BASIC RESEARCH

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The Hottest Journals of the Decade

High-Impact Journals, Ranked by Citations Per Paper, 1992-2002

(Among non-review journals that published continuously, January 1992 to December 2002)

Molecular Biology & Genetics				Physics			
Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper
1	Cell	4,535	175	1	Science	839	77
2	Nature	1,658	124	2	Nature	943	70
3	Science	1,368	108	3	Physical Review Letters	28,908	25
4	Nature Genetics	2,062	98	4	PNAS	214	14
5	Genes & Development	2,931	80	5	Nuclear Physics B	10,740	14
6	J. Cell Biology	5,480	59	6	Physics Letters B	16,751	13
7	EMBO Journal	7,199	56	7	Applied Physics Letters	27,418	13
8	Molec. Cellular Biology	8,530	42	8	Physical Review D	18,074	12
9	Development	4,793	41	9	Physical Review B	51,163	12
10	PNAS	5,246	41	10	Journal of Rheology	891	11

SOURCE: Essential Science Indicators

Listings continue on Page 2

Science Watch examines here the highest-impact journals in selected fields of science over the last decade. Above, and on the following page, are tables listing the top 10 journals in 11 main fields, ranked according to citations per paper (with the order determined by each journal's cites-per-paper score prior to rounding).

For these rankings, *Science Watch* turned to the Thomson ISI web-based evaluation tool Essential Science Indicators (ESI), which tracks publication and citation data over the last 10 years (with updates every two months). The present survey is based on papers published and cited in ISI-indexed journals between January 1, 1992, and December 31, 2002.

ESI defines "papers" as regular scientific articles, review articles, proceedings papers, and research notes. Not counted are letters to the editor, correction notices, and abstracts. The fields in ESI, and in this study, are defined by groupings of ISI-indexed journals, with no journal assigned to more than one field. Of the 22 broad fields included in ESI, 11 are represented here.

The journal listings in ESI include review journals, but in this analysis *Science Watch* elected to rank only those journals that do not exclusively feature reviews. Review articles, of course, serve as a convenient citation resource for authors to refer to previous work on a given topic. Such papers, therefore, tend to be highly cited, and this citation advantage extends to review journals. For this study, *Science Watch* chose to present journals that primarily publish discovery accounts and other original research.

These rankings also include only those journals that published continuously during the period under study, January 1992 to December 2002. Newer journals such as *Immunity* (1994) or *Nature Immunology* (2000) were excluded from consideration, because calculation of their citations per paper would reflect different time spans and affect their scores. In instances of journals that changed names (e.g., the *Netherlands Journal of Sea Research* becoming the *Journal of Sea Research*, or the *Journal of Physical Chemistry* splitting into "A" and "B" editions after 1997), impact scores were calculated by using combined citation figures for the old and new names.

In addition to ranking the specialty journals in each field, ESI also assigns individual papers in the multidisciplinary journals *Science*, *Nature*, and *Proceedings of the National Academy of Sciences of the USA* (PNAS), to their respective fields. (This determination is made by an algorithmic examination of the journals within each paper's cited references, as well as of the journals in which each paper has subsequently been cited.)

Of the multidisciplinary journals included here, *Nature* makes a particularly strong showing, appearing not only in all 11 rankings, but in either the #1 or #2 spot in each. *Science* is nearly as impressive, showing up in all the fields except for Pharmacology & Toxicology, and within the top two in all the remaining lists save for Molecular Biology & Genetics, where it ranks third. PNAS, meanwhile, is far from absent, appearing in all but the Space Science category, and outside the top five only once.

High-Impact Journals in 9 Fields, Ranked by Citations Per Paper, 1992-2002

(Among non-review journals that published continuously, January 1992 to December 2002)

Biology & Biochemistry				Space Science				Clinical Medicine			
Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper
1	Nature	1,512	172	1	Nature	688	48	1	Nature	624	272
2	Science	1,436	163	2	Science	476	32	2	Science	746	270
3	PNAS	7,745	49	3	Astrophys. J. Suppl. Ser.	1,482	26	3	New Engl. J. Medicine	4,331	104
4	FASEB Journal	2,535	38	4	Astrophysical Journal	23,529	18	4	PNAS	3,872	76
5	Molecular Endocrinology	2,004	32	5	Astronomical Journal	5,114	16	5	J. Experimental Medicine	4,596	71
6	J. Biological Chemistry	55,168	30	6	Mon. Not. Royal Ast. Soc.	8,417	13	6	J. Clinical Investigation	6,143	54
7	Systematic Biology	411	27	7	J. Geophys. Res.-Planets	1,340	11	7	J. Natl. Cancer Institute	1,882	49
8	Bio/Technology	801	27	8	Icarus	2,245	11	8	Ann. Internal Medicine	2,509	47
9	Nucleic Acids Research	9,507	24	9	Publ. Astron. Soc. Pacific	1,704	10	9	JAMA-J. Am. Med. Assn.	5,349	43
10	J. Bone Mineral Research	2,601	23	10	Astronomy & Astrophysics	14,476	10	10	The Lancet	7,690	40
Plant & Animal Sciences				Pharmacology & Toxicology				Microbiology			
Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper
1	Science	402	84	1	Nature	23	152	1	Nature	186	125
2	Nature	446	55	2	PNAS	114	73	2	Science	275	112
3	Plant Cell	1,898	45	3	Molecular Pharmacology	3,448	25	3	PNAS	1,745	44
4	PNAS	1,335	41	4	Drugs	1,614	18	4	Journal of Virology	13,103	24
5	Plant Journal	2,549	25	5	J. Pharmacol. Exp. Therap.	7,931	17	5	Molecular Microbiology	4,960	24
6	Plant Physiology	6,178	19	6	British J. Pharmacology	7,254	16	6	Journal of Bacteriology	11,240	18
7	Limnology & Oceanography	2,065	18	7	Chem. Res. Toxicology	1,765	14	7	Virology	6,462	17
8	Ann. Missouri Bot. Garden	367	17	8	Toxicol. Appl. Pharmacology	2,500	14	8	Appl. Environ. Microbiology	8,746	16
9	Plant Molecular Biology	3,283	17	9	Biochemical Pharmacology	5,248	13	9	Antimicrob. Agents Chemo.	6,453	16
10	J. Animal Ecology	932	16	10	Naunyn-Schmied. Arch. Pharm.	2,037	11	10	J. General Virology	4,265	15
Chemistry				Neuroscience & Behavior				Immunology			
Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper	Rank	Journal	# of papers, 1992-2002	Cites per paper
1	Nature	587	97	1	Science	846	137	1	Nature	387	249
2	Science	1,057	83	2	Nature	1,020	137	2	Science	476	199
3	PNAS	769	31	3	Neuron	2,851	70	3	PNAS	1,565	55
4	J. Amer. Chem. Soc.	24,590	24	4	PNAS	2,677	54	4	Journal of Immunology	16,546	29
5	Angew. Chem. Int. Ed.	7,906	20	5	Annals of Neurology	2,545	36	5	European J. Immunology	5,097	25
6	Analytical Chemistry	8,797	18	6	Journal of Neuroscience	9,198	34	6	J. Infectious Diseases	6,122	21
7	J. Medicinal Chemistry	5,921	17	7	Brain	1,726	30	7	AIDS	3,108	19
8	J. Computational Chem.	1,604	16	8	J. Cerebr. Blood Flow Metabol.	1,604	25	8	J. Leukocyte Biology	2,455	18
9	J. Physical Chemistry B	19,794	15	9	Brain Pathology	531	24	9	Infection and Immunity	9,651	18
10	Journal of Catalysis	3,983	15	10	Cerebral Cortex	772	23	10	J. Acq. Imm. Def. Syndromes	1,570	17

SOURCE: Essential Science Indicators

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