

The Hottest Research of 2005-06

*by Christopher
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Turning to its customary annual roundup of the hottest of recent research, *Science Watch* here presents the scientists who, as of late 2006, had published the greatest number of Hot Papers over the preceding two years. The second [table](#) below lists the papers published in 2006 (excluding reviews) that were most cited by year's end.

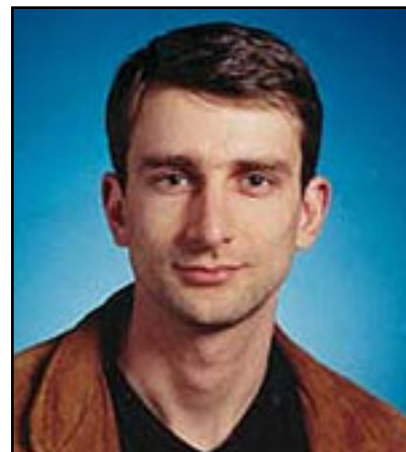
For the second year in a row, immunologist [Shizuo Akira](#) occupies the top tier, this time by virtue of seven Hot Papers on Toll-like receptors, innate immunity, viral recognition, and other topics. Akira and colleagues also published a 2006 report that wound up among the year's most cited (K.J. Ishii, *et al.*, #33 in the first [table](#)).



Among the authors with six Hot Papers, [Max Tegmark](#) makes his second consecutive appearance in an annual roundup, thanks to his contributions to six reports in space science. One of these, on the Fourth Data Release of the Sloan Digital Sky Survey (SDSS), scores the #1 spot in the table of 2006's most-cited papers (J.K. Adelman-McCarthy, *et al.*) and already ranks at #4 in this issue's Top Ten in [Physics](#), where another SDSS report to which Tegmark contributed ([U. Seljak, et al.](#)) is currently #8.

Elsewhere among the authors with six Hot Papers are three contributors to large, multiauthor reports on breast cancer: John L. Bryant, Norman Wolmark,

and Richard D. Gelber. (Note: the authors within each tier are ranked according to their average cites per Hot Paper.) One of these papers, on the effects of chemotherapy and hormonal therapy in early breast cancer (O. Abe, *et al.*, *Lancet*, 365[9472]: 1687-1717, 2005), includes the other oncology specialists featured in the table (Forbes, Ingle, Buzdar, [Cuzick](#), Goldhirsch, Mauriac, and Fehrenbacher) and has now been cited more than 200 times. In all, the names of these 10 authors appear together frequently, in various combinations, among the contributors to a core of current Hot Papers on [breast cancer](#) treatment.



The Hot Papers of physicists Mikhail Kopytine, Basanta K. Nandi, and Thomas Peitzmann represent their contributions to international high-energy collaborations, notably the PHENIX and STAR groups at Brookhaven National Laboratory. In the [Physics](#) Top Ten in this issue, correspondent Simon Mitton writes about their highly cited papers reporting the hunt for a quark-gluon plasma.

Rounding out the featured authors, Mark J. Daly has coauthored five Hot Papers in genome mapping and analysis, including the report currently ranked #1 in the [Biology](#) Top Ten, while Scott M. Grundy's Hot Papers discuss the metabolic syndrome, lipid-lowering therapy, and other aspects of cardiovascular disease.

As was the case last year, the *New England Journal of Medicine* distinguishes itself in the list of the year's most-cited papers, this time fielding 10 of the 40 presented here. ■

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Scientists with Multiple Hot Papers			
Name	Institution	Field	No. of Hot Papers
Shizuo Akira [see also see also see also]	Osaka University	Immunology	7
John L. Bryant	University of Pittsburgh	Biostatistics/ Oncology	6
Norman Wolmark	Allegheny General Hospital	Oncology	6

Richard D. Gelber	Dana-Farber Cancer Inst.	Biostatistics/ Oncology	6
Max Tegmark	MIT	Space Science	6
Mikhail Kopytine	Kent State University	Physics	6
Basanta K. Nandi	Indian Inst. Technol., Bombay	Physics	6
Thomas Peitzmann	Utrecht University	Physics	6
Mark J. Daly	Harvard Medical School	Genetics	6
John F. Forbes	Univ. Newcastle, Australia	Oncology	5
James N. Ingle	Mayo Clinic Cancer Ctr.	Oncology	5
Aman U. Buzdar	UT M.D. Anderson Cancer Ctr.	Oncology	5
Scott M. Grundy	UT Southwestern Med. Ctr.	Nutrition/ Metabolism	5
Jack Cuzick	Cancer Res. UK Clinical Ctr.	Epidemiology/ Oncology	5
Aron Goldhirsch	European Inst. Oncology, Milan	Oncology	5
Louis Mauriac	Institut Bergonié, Bordeaux	Oncology	5
Louis Fehrenbacher	Kaiser Permanente	Oncology	5
SOURCE: Thomson Scientific Hot Papers Database .			

The Red-Hot Research Papers of 2006

Rank	Paper	Citations
1	J.K. Adelman-McCarthy, <i>et al.</i> , " The Fourth Data Release of the Sloan Digital Sky Survey ," <i>Astrophys. J.-Suppl. Ser.</i> , 162 (1): 38-48, January 2006.	98
2	P. Astier, <i>et al.</i> , " The Supernova Legacy Survey: measurement of Ω_M, Ω_Λ and w from the first year data set ," <i>Astron. & Astrophys.</i> , 447(1): 31, February 2006.	87
3	G. Van den Berghe, <i>et al.</i> , " Intensive insulin therapy in the medical ICU ," <i>New Engl. J. Med.</i> , 354(5): 449-61, 2 February 2006.	85
4	C.F. Macrae, <i>et al.</i> , " Mercury: visualization and analysis of crystal structures ," <i>J. Appl. Crystallog.</i> , 39(Part 3): 453-7, June 2006.	82

5	C.L. Ogden, <i>et al.</i> , " Prevalence of overweight and obesity in the United States, 1999-2004 ," <i>JAMA-J. Am. Med. Assn.</i> , 295(13): 1549-55, 5 April 2006.	78
6	D.J. Croton, <i>et al.</i> , " The many lives of active galactic nuclei: cooling flows, black holes and the luminosities and colours of galaxies ," <i>Mon. Not. Roy. Astron. Soc.</i> , 365(1): 11-28, 1 January 2006.	76
7	R.J. Motzer, <i>et al.</i> , " Activity of SU11248, a multitargeted inhibitor of vascular endothelial growth factor receptor and platelet-derived growth factor receptor, in patients with metastatic renal cell carcinoma ," <i>J. Clin. Oncol.</i> , 24(1): 16-24, 1 January 2006.	73
8	M.F. Skrutskie, <i>et al.</i> , " The Two Micron All Sky Survey (2MASS) ," <i>Astronom. J.</i> , 131(2): 1163-83, February 2006.	72
9	M.W. Zwierlein, <i>et al.</i> , " Fermionic superfluidity with imbalanced spin populations ," <i>Science</i> , 311(5760): 492-6, 27 January 2006.	65
10	G.B. Partridge, <i>et al.</i> , " Pairing and phase separation in a polarized fermi gas ," <i>Science</i> , 311(5760): 503-5, 27 January 2006.	64
11	Y. Tsukada, <i>et al.</i> , " Histone demethylation by a family of JmjC domain-containing proteins ," <i>Nature</i> , 439(7078): 811-6, 16 February 2006.	63
12	J.A. Bonner, <i>et al.</i> , " Radiotherapy plus cetuximab for squamous-cell carcinoma of the head and neck ," <i>New Engl. J. Med.</i> , 354(6): 567-78, 9 February 2006.	62
13	S. Janssens, <i>et al.</i> , " Autologous bone marrow-derived stem-cell transfer in patients with ST-segment elevation myocardial infarction: double-blind, randomised controlled trial ," <i>Lancet</i> , 367(9505): 113-21, 14 January 2006.	58
14	R.D. Jackson, <i>et al.</i> , " Calcium plus vitamin D supplementation and the risk of fractures ," <i>New Engl. J. Med.</i> , 354(7): 669-83, 16 February 2006.	57
15	S. Lesne, <i>et al.</i> , " A specific amyloid-beta protein assembly in the brain impairs memory ," <i>Nature</i> , 440(7082): 352-7, 16 March 2006.	57
16	D.T. Mangano, I.C. Tudor, C. Dietzel, " The risk associated with aprotinin in cardiac surgery ," <i>New Engl. J. Med.</i> , 354(4): 353-65, 26 January 2006.	57
17	D.K. Armstrong, <i>et al.</i> , " Intraperitoneal cisplatin and paclitaxel in ovarian cancer ," <i>New Engl. J. Med.</i> , 354(1): 34-43, 5 January 2006.	56
18	M. Veldhoen, <i>et al.</i> , " TGFbeta in the context of an inflammatory cytokine milieu supports de novo differentiation of IL-17-producing T cells ," <i>Immunity</i> , 24(2): 179-89, February 2006.	55

19	F. Pi-Sunyer, <i>et al.</i> , " Effect of rimonabant, a cannabinoid-1 receptor blocker, on weight and cardiometabolic risk factors in overweight or obese patients. RIO-North America: A randomized controlled trial, " <i>JAMA-J. Am. Med. Assn.</i> , 295(7): 761-75, 15 February 2006.	53
20	M.H. Trivedi, <i>et al.</i> , " Evaluation of outcomes with citalopram for depression using measurement-based care in STAR*D: Implications for clinical practice, " <i>Am. J. Psychiat.</i> , 163(1): 28-40, January 2006.	53
21	D.L. Bhatt, <i>et al.</i> , " Clopidogrel and aspirin versus aspirin alone for the prevention of atherothrombotic events, " <i>New Engl. J. Med.</i> , 354(16): 1706-17, 20 April 2006.	52
22	K.H. Bonaa, <i>et al.</i> , " Homocysteine lowering and cardiovascular events after acute myocardial infarction, " <i>New Engl. J. Med.</i> , 354(15): 1578-88, 13 April 2006.	51
23	A.C. Gavin, <i>et al.</i> , " Proteome survey reveals modularity of the yeast cell, " <i>Nature</i> , 440(7084): 631-6, 30 March 2006.	51
24	T. Vesikari, <i>et al.</i> , " Safety and efficacy of a pentavalent human-bovine (WC3) reassortant rotavirus vaccine, " <i>New Engl. J. Med.</i> , 354(1): 23-33, 5 January 2006.	51
25	Q.Z. Tang, <i>et al.</i> , " Visualizing regulatory T cell control of autoimmune responses in nonobese diabetic mice, " <i>Nature Immunology</i> , 7(1): 83-92, January 2006.	50
26	E. Lonn, <i>et al.</i> , " Homocysteine lowering with folic acid and B vitamins in vascular disease, " <i>New Engl. J. Med.</i> , 354(15): 1567-7, 13 April 2006.	48
27	D.L. Barber, <i>et al.</i> , " Restoring function in exhausted CD8 T cells during chronic viral infection, " <i>Nature</i> , 439(7077): 682-7, 9 February 2006.	48
28	M. Shackleton, <i>et al.</i> , " Generation of a functional mammary gland from a single stem cell, " <i>Nature</i> , 439(7072): 84-8, 5 January 2006.	48
29	D.E. Sheehy, L. Radzihovsky, " BEC-BCS crossover in 'Magnetized' feshbach-resonantly paired superfluids, " <i>Phys. Rev. Lett.</i> , 96(6): 060401, 17 February 2006.	47
30	N.M.R. Peres, F. Guinea, A.H.C. Neto, " Electronic properties of disordered two-dimensional carbon, " <i>Phys. Rev. B</i> , 73(12): 125411, March 2006.	46
31	G.M. Ruiz-Palacios, <i>et al.</i> , " Safety and efficacy of an attenuated vaccine against severe rotavirus gastroenteritis, " <i>New Engl. J. Med.</i> , 354(1): 11-22, 5 January 2006.	46
32	W.D. Collins, <i>et al.</i> , " The Community Climate System Model version 3 (CCSM3), " <i>J. Climate</i> , 19(11): 2122-43, 1 June 2006.	45
33	K.J. Ishii, <i>et al.</i> , " A Toll-like receptor-independent antiviral response induced by double-stranded B-form DNA, " <i>Nature Immunology</i> , 7(1): 40-8, January 2006.	45

34	E. Bettelli, <i>et al.</i> , " Reciprocal developmental pathways for the generation of pathogenic effector T(H)17 and regulatory T cells, " <i>Nature</i> , 441(7090): 235-8, 11 May 2006.	44
35	B. Williams, <i>et al.</i> , " Differential impact of blood pressure-lowering drugs on central aortic pressure and clinical outcomes: Principal results of the Conduit Artery Function Evaluation (CAFE) study, " <i>Circulation</i> , 113(9): 1213-25, 7 March 2006.	44
36	S.F.A. Grant, <i>et al.</i> , " Variant of transcription factor 7-like 2 (TCF7L2) gene confers risk of type 2 diabetes, " <i>Nature Genetics</i> , 38(3): 320-3, March 2006.	44
37	C. Mao, <i>et al.</i> , " Efficacy of human papillomavirus-16 vaccine to prevent cervical intraepithelial neoplasia: A randomized controlled trial, " <i>Obstetrics & Gynecology</i> , 107(1): 18-27, January 2006.	44
38	J.A. Nousek, <i>et al.</i> , " Evidence for a canonical gamma-ray burst afterglow light curve in the Swift XRT data, " <i>Astrophys. J.</i> , 642(1): 389-400, 1 May 2006.	43
39	D.M. Harper, <i>et al.</i> , " Sustained efficacy up to 4-5 years of a bivalent L1 virus-like particle vaccine against human papillomavirus types 16 and 18: follow-up from a randomised control trial, " <i>Lancet</i> , 367(9518): 1247-55, 15 April 2006.	43
40	E.V. Shevchenko, <i>et al.</i> , " Structural diversity in binary nanoparticle superlattices, " <i>Nature</i> , 439(7072): 55-9, 5 January 2006.	43
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