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## The Hottest Research of 2003-04

### Scientists with Multiple Hot Papers

Name	Institution	Field	Number of Hot Papers
Malik Peiris	University of Hong Kong	Microbiology	9
Claire M. Fraser	Institute for Genomic Research	Genomics	8
Henry R. Black	Rush Univ. Medical Ctr.	Clinical Medicine	7
Wilina Lim	Hong Kong Dept. Health	Virology	7
Kwok-Yung Yuen	University of Hong Kong	Microbiology	7
Albert D.M.E. Osterhaus	Erasmus University	Virology	7
Arkady A. Tseytlin	Ohio State University	Physics	7
Ron A.M. Fouchier	Erasmus University	Virology	6
Rory Collins	CTSU, University of Oxford	Epidemiology	6
Ian T. Paulsen	Institute for Genomic Research	Genomics	6
Shizuo Akira	Osaka University	Immunology	6
Jeffrey A. Munn	U.S. Naval Observatory	Astronomy	6
Robert H. Lupton	Princeton University	Astronomy	6
Sergey A. Frolov	SUNY Inst. Technology	Appl. Math./Physics	6
Donald G. York	University of Chicago	Astronomy	6
Daniel J. Jacob	Harvard University	Atmospheric Chemistry	6

SOURCE: Thomson Scientific Hot Papers Database

In its latest annual roundup of recent research, *Science Watch* presents the above list of authors who, as of late 2004, had published the greatest number of Hot Papers over the preceding two years. The table on page 2 lists the (non-review) papers published in 2004 that achieved the highest citation totals by year's end (those papers cited more than 35 times).

Atop the list of scientists is the University of Hong Kong's Malik Peiris, interviewed last fall in these pages (15[5]: 3-4, September/October 2004), with nine highly cited reports on severe acute respiratory syndrome, or SARS. As a measure of SARS's continuing influence on the medical literature in 2004, half of the current Medicine Top Ten is devoted to the topic (see page 5), and five of the featured researchers above had a hand in four of those papers. Peiris is lead author on paper #9 (from *The Lancet*), with Kwok-Yung Yuen among the coauthors. Wilina Lim contributed to that paper as well as to the report currently ranked at #1 in medicine (T.G. Ksiazek, *et al.*, *NEJM*), while Erasmus University virologists Albert Osterhaus and Ron Fouchier added their expertise to the papers at #2 and #8 (C. Drosten, *et al.*, *NEJM*; P.A. Rota, *et al.*, *Science*).

On the second rung with eight Hot Papers, and returning to the list after a four-year absence, is Claire M. Fraser of The Institute for Genomic Research (TIGR). One of her recent hot reports, on the genome sequence of the Brown Norway rat, proved to be among 2004's

hottest, ranking at #3 in the table on page 2 (R.A. Gibbs, *et al.*, *Nature*). Fraser's TIGR colleague Ian T. Paulsen joined her on six hot reports. (The order of names within each tier of the table, incidentally, is determined by average citations per Hot Paper.)

Henry R. Black of the Rush University Medical Center makes his first appearance in an annual roundup, thanks to seven Hot Papers in medicine. One of these, on estrogen treatments in postmenopausal women (G.L. Anderson, *et al.*, *JAMA*), emerged as 2004's most-cited paper, and a late-2002 report is still going strong, appearing at #3 in the current Medicine Top Ten (C.D. Furberg, *et al.*, *JAMA*).

Theoretical physicist Arkady A. Tseytlin, who spoke to *Science Watch* in the previous issue (16[1]: 3-4, January/February 2005), has fielded seven Hot Papers, joined on six of those by coauthor Sergey A. Frolov. Another familiar name, Rory Collins of the Clinical Trial Service Unit, University of Oxford, appears for the second year in a row; *Science Watch* interviewed him last year (15[4]: 3-4, July/August 2004).

Shizuo Akira's six Hot Papers on toll-like receptors include two of 2004's hottest (#11, F. Heil, *et al.*, and #12, S.S. Diebold *et al.*, both from *Science*). Astronomers Jeffrey A. Munn, Robert H. Lupton, and Donald G. York contributed to one of 2004's most cited (#10, M. Tegmark, *et al.*, *Phys. Rev. D*), while Daniel J. Jacob's six Hot Papers report on ozone, pollution, and other atmospheric phenomena.

# The Red-Hot Research Papers of 2004

Rank	Paper	Citations	Rank	Paper	Citations
1	G.L. Anderson, <i>et al.</i> , "Effects of conjugated, equine estrogen in postmenopausal women with hysterectomy – The Women's Health Initiative randomized controlled trial," <i>JAMA-J. Amer. Med. Assn.</i> , 291(14): 1701-12, 14 April 2004.	93	24	V. Kubarovskiy, <i>et al.</i> , "Observation of an exotic baryon with $S = +1$ in photoproduction from the proton," <i>Phys. Rev. Lett.</i> , 92(3): No. 032001, 23 January 2004.	48
2	T.J. Lynch, <i>et al.</i> , "Activating mutations in the epidermal growth factor receptor underlying responsiveness of non-small-cell lung cancer to gefitinib," <i>New Engl. J. Med.</i> , 350(21): 2129-39, 20 May 2004.	91	25	R.M. Goldberg, <i>et al.</i> , "A randomized controlled trial of fluorouracil plus leucovorin, irinotecan, and oxaliplatin combinations in patients with previously untreated metastatic colorectal cancer," <i>J. Clin. Oncol.</i> , 22(1): 23-30, 1 January 2004.	48
3	R.A. Gibbs, <i>et al.</i> , "Genome sequence of the Brown Norway rat yields insights into mammalian evolution," <i>Nature</i> , 428(6982): 493-521, 1 April 2004.	76	26	C.L. Kuo, <i>et al.</i> , "High-resolution observations of the cosmic microwave background power spectrum with ACBAR," <i>Astrophys. J.</i> , 600(1): 32-51, 1 January 2004.	48
4	G.W. Stone, <i>et al.</i> , "A polymer-based, paclitaxel-eluting stent in patients with coronary artery disease," <i>New Engl. J. Med.</i> , 350(3): 221-31, 15 January 2004.	74	27	J.C. Venter, <i>et al.</i> , "Environmental genome shotgun sequencing of the Sargasso Sea," <i>Science</i> , 304(5667): 66-74, 2 April 2004.	47
5	A. Bateman, <i>et al.</i> , "The Pfam protein families database," <i>Nucleic Acids Res.</i> , 32: D138-41, 1 January 2004.	73	28	M. Giavalisco, <i>et al.</i> , "The Great Observatories Origins Deep Survey: Initial results from optical and near-infrared imaging," <i>Astrophys. J.</i> , 600(2): L93-8, 10 January 2004.	46
6	J.G. Paez, <i>et al.</i> , "EGFR mutations in lung cancer: Correlation with clinical response to gefitinib therapy," <i>Science</i> , 304(5676): 1497-1500, 4 June 2004.	72	29	A. Airapetian, <i>et al.</i> , "Evidence for a narrow $ S  = 1$ baryon state at a mass of 1528 MeV in quasi-real photoproduction," <i>Phys. Lett. B</i> , 585(3-4): 213-22, 15 April 2004.	45
7	C.A. Regal, M. Greiner, D.S. Jin, "Observation of resonance condensation of fermionic atom pairs," <i>Phys. Rev. Lett.</i> , 92(4): No. 040403, 30 January 2004.	71	30	R.S. Herbst, <i>et al.</i> , "Gefitinib in combination with paclitaxel and carboplatin in advanced non-small-cell lung cancer: A phase III trial – INTACT 2," <i>J. Clin. Oncol.</i> , 22(5): 785-94, 1 March 2004.	34
8	C.P. Cannon, <i>et al.</i> , "Intensive versus moderate lipid lowering with statins after acute coronary syndromes," <i>New Engl. J. Med.</i> , 350(15): 1495-1504, 8 April 2004.	66	31	K. Berns, <i>et al.</i> , "A large-scale RNAi screen in human cells identifies new components of the p53 pathway," <i>Nature</i> , 428(6981): 431-7, 25 March 2004.	43
9	K.N. Ferreira, <i>et al.</i> , "Architecture of the photosynthetic oxygen-evolving center," <i>Science</i> , 303(5665): 1831-8, 19 March 2004.	65	32	S.J. Hadziyannis, <i>et al.</i> , "Peginterferon-alpha 2a and ribavirin combination therapy in chronic hepatitis C – A randomized study of treatment duration and ribavirin dose," <i>Ann. Int. Med.</i> , 140(5): 346-55, 2 March 2004.	42
10	M. Tegmark, <i>et al.</i> , "Cosmological parameters from SDSS and WMAP," <i>Phys. Rev. D</i> , 69(10): No. 103501, May 2004.	64	33	M.W. Zwierlin, <i>et al.</i> , "Condensation of pairs of fermionic atoms near a Feshbach resonance," <i>Phys. Rev. Lett.</i> , 91(12): No. 120403, 26 March 2004.	41
11	F. Heil, <i>et al.</i> , "Species-specific recognition of single-stranded RNA via toll-like receptor 7 and 8," <i>Science</i> , 303(5663): 1526-9, 5 March 2004.	64	34	W.S. Hwang, <i>et al.</i> , "Evidence of a pluripotent human embryonic stem cell line derived from a cloned blastocyst," <i>Science</i> , 303(5664): 1669-74, 12 March 2004.	41
12	S.S. Diebold, <i>et al.</i> , "Innate antiviral responses by means of TLR7-mediated recognition of single-stranded RNA," <i>Science</i> , 303(5663): 1529-31, 5 March 2004.	58	35	D.K. Zhang, <i>et al.</i> , "A toll-like receptor that prevents infection by uropathogenic bacteria," <i>Science</i> , 303(5663): 1522-6, 5 March 2004.	41
13	C. Alt, <i>et al.</i> , "Evidence for an exotic $S = -2$ baryon resonance in proton-proton collisions at the CERN SPS," <i>Phys. Rev. Lett.</i> , 92(4): No. 042003, 30 January 2004.	58	36	T.R. Mempel, <i>et al.</i> , "T-cell priming by dendritic cells in lymph nodes occurs in three distinct phases," <i>Nature</i> , 427(6970): 154-9, 8 January 2004.	41
14	S.E. Nissen, <i>et al.</i> , "Effect of intensive compared with moderate lipid-lowering therapy on progression of coronary atherosclerosis – a randomized controlled trial," <i>JAMA-J. Amer. Med. Assn.</i> , 291(9): 1071-80, 3 March 2004.	57	37	B. van den Berg, <i>et al.</i> , "X-ray structure of a protein-conducting channel," <i>Nature</i> , 427(6969): 36-44, 1 January 2004.	41
15	S.M. Li, <i>et al.</i> , "A map of the interactome network of the metazoan <i>C. elegans</i> ," <i>Science</i> , 303(5657): 540-3, 23 January 2004.	57	38	C.Z. Chen, <i>et al.</i> , "MicroRNAs modulate hematopoietic lineage differentiation," <i>Science</i> , 303(5654): 83-6, 2 January 2004.	40
16	A. Verdell, <i>et al.</i> , "RNAi-mediated targeting of heterochromatin by the RITS complex," <i>Science</i> , 303(5658): 672-6, 20 January 2004.	54	39	E. Lund, <i>et al.</i> , "Nuclear export of microRNA precursors," <i>Science</i> , 303(5654): 95-8, 2 January 2004.	39
17	A.H.Y. Tong, <i>et al.</i> , "Global mapping of the yeast genetic interaction network," <i>Science</i> , 303(5659): 808-13, 6 February 2004.	53	40	A. Reynolds, <i>et al.</i> , "Rational siRNA design for RNA interference," <i>Nature Biotech.</i> , 22(3): 326-30, March 2004.	38
18	L.T. Vassilev, <i>et al.</i> , "In vivo activation of the p53 pathway by small-molecule antagonists of MDM2," <i>Science</i> , 303(5659): 844-8, 6 February 2004.	50	41	R. Apweiler, <i>et al.</i> , "UniProt: the Universal Protein knowledgebase," <i>Nucleic Acids Res.</i> , 32: D115-9, 1 January 2004.	38
19	M. Pal-Bhadra, <i>et al.</i> , "Heterochromatic silencing and HP1 localization in <i>Drosophila</i> are dependent on the RNAi machinery," <i>Science</i> , 303(5658): 669-72, 30 January 2004.	50	42	N. Beisert, "The complete one-loop dilatation operator of $N=4$ super Yang-Mills theory," <i>Nucl. Phys. B</i> , 676(1-2): 3-42, 5 January 2004.	37
20	C.A. Llewellyn, <i>et al.</i> , "Possible transmission of variant Creutzfeldt-Jakob disease by blood transfusion," <i>Lancet</i> , 363(9407): 417-21, 7 February 2004.	49	43	G. Giaccone, <i>et al.</i> , "Gefitinib in combination with gemcitabine and cisplatin in advanced non-small-cell lung cancer: A phase III trial – INTACT 1," <i>J. Clin. Oncol.</i> , 22(5): 777-84, 1 March 2004.	36
21	C.E. Murry, <i>et al.</i> , "Haematopoietic stem cells do not transdifferentiate into cardiac myocytes in myocardial infarcts," <i>Nature</i> , 428(6983): 664-8, 8 April 2004.	48	44	S.W. Altmann, <i>et al.</i> , "Niemann-Pick C1 like 1 protein is critical for intestinal cholesterol absorption," <i>Science</i> , 303(5661): 1201-4, 20 February 2004.	36
22	L.B. Balsam, <i>et al.</i> , "Haematopoietic stem cells adopt mature haematopoietic fates in ischaemic myocardium," <i>Nature</i> , 428(6983): 668-73, 8 April 2004.	48	45	J.F. Colombel, <i>et al.</i> , "The safety profile of infliximab in patients with Crohn's disease: The Mayo Clinic experience in 500 patients," <i>Gastroenterol.</i> , 126(1): 19-31, January 2004.	36
23	A.H. Mokdad, <i>et al.</i> , "Actual causes of death in the United States, 2000," <i>Jama-J. Amer. Med. Assn.</i> , 291(10): 1238-45, 10 March 2004.	48	46	N. Sato, <i>et al.</i> , "Maintenance of pluripotency in human and mouse embryonic stem cells through activation of Wnt signaling by a pharmacological GSK-3-specific inhibitor," <i>Nature Medicine</i> , 10(1): 55-63, January 2004.	36

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