

Science

**1200 New York Avenue, NW
Washington, DC 20005**

Editorial: 202-326-6550, FAX 202-289-7562

News: 202-326-6581, FAX 202-371-9227

**Bateman House, 82-88 Hills Road
Cambridge, UK CB2 1LQ**

+44 (0) 1223 326500, FAX +44 (0) 1223 326501

SUBSCRIPTION SERVICES For change of address, missing issues, new orders and renewals, and payment questions: 866-434-AAAS (2227) or 202-326-6417, FAX 202-842-1065. Mailing addresses: AAAS, P.O. Box 96178, Washington, DC 20090-6178 or AAAS Member Services, 1200 New York Avenue, NW, Washington, DC 20005

INSTITUTIONAL SITE LICENSES please call 202-326-6755 for any questions or information

REPRINTS: Author Inquiries 800-635-7181

Commercial Inquiries 803-359-4578

PERMISSIONS 202-326-7074, FAX 202-682-0816

MEMBER BENEFITS AAAS/Barnes&Noble.com bookstore www.aaas.org/bn; AAAS Online Store <http://www.apisource.com/aaas/>; code MKB6; AAAS Travels: Betchart Expeditions 800-252-4910; Apple Store www.apple.com/store/aaas; Bank of America MasterCard 1-800-833-6262 priority code FAA3YU; Cold Spring Harbor Laboratory Press Publications www.cshlpress.com/affiliates/aaas.htm; GEICO Auto Insurance www.geico.com/landingpage/go51.htm?logo=17624; Hertz 800-654-2200 CDP#343457; Office Depot <http://logs://bsd.officedepot.com/portallnLogIn.do>; Seabury & Smith Life Insurance 800-424-9883; Subaru VIP Program 202-326-6417; VIP Moving Services <http://www.vipmayflower.com/domestic/index.html>; Other Benefits: AAAS Member Services 202-326-6417 or www.aaasmember.org.

science_editors@aaas.org (for general editorial queries)
science_letters@aaas.org (for queries about letters)
science_reviews@aaas.org (for returning manuscript reviews)
science_bookrevs@aaas.org (for book review queries)

Published by the American Association for the Advancement of Science (AAAS), Science serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in Science—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by AAAS or the institutions with which the authors are affiliated.

AAAS was founded in 1848 and incorporated in 1874. Its mission is to advance science and innovation throughout the world for the benefit of all people. The goals of the association are to: foster communication among scientists, engineers and the public; enhance international cooperation in science and its applications; promote the responsible conduct and use of science and technology; foster education in science and technology for everyone; enhance the science and technology workforce and infrastructure; increase public understanding and appreciation of science and technology; and strengthen support for the science and technology enterprise.

INFORMATION FOR AUTHORS

See pages 634 and 635 of the 1 February 2008 issue or access www.sciencemag.org/about/authors

DEPUTY EDITORS **R. Brooks Hanson, Barbara R. Jasny, Katrina L. Kelnor**

NEWS EDITOR **Colin Norman**

EDITORIAL SUPERVISOR SENIOR EDITOR Phillip D. Szuromi; **SENIOR EDITOR/PERSPECTIVES** Lisa D. Chong; **SENIOR EDITORS** Gilbert J. Chin, Pamela J. Hines, Paula A. Kiberstis (Boston), Marc S. Lavine (Toronto), Beverly A. Purnell, L. Bryan Ray, Guy Riddihough, H. Jesse Smith, Valda Vinson, David Voss; **ASSOCIATE EDITORS** Jake S. Yeston, Laura M. Zahn; **ONLINE EDITOR** Stewart Wills; **ASSOCIATE ONLINE EDITORS** Robert Frederick, Tara S. Marathe; **WEB CONTENT DEVELOPER** Martyn Green; **BOOK REVIEW EDITOR** Sherman J. Suter; **ASSOCIATE LETTERS EDITOR** Jennifer Sills; **EDITORIAL MANAGER** Cara Tate; **SENIOR COPY EDITORS** Jeffrey E. Cook, Cynthia Howe, Harry Jach, Barbara P. Ordway, Trista Wagoner; **COPY EDITORS** Chris Filiatreau, Lauren Kmec, Peter Mooreside; **EDITORIAL COORDINATORS** Carolyn Kyle, Beverly Shields; **PUBLICATION ASSISTANTS** Ramatoulaye Diop, Joi S. Granger, Jeffrey Hearn, Lisa Johnson, Scott Miller, Jerry Richardson, Brian White, Anita Wynn; **EDITORIAL ASSISTANTS** Carlos L. Durham, Emily Guise, Patricia M. Moore, Jennifer A. Seibert; **EXECUTIVE ASSISTANT** Sylvia S. Kihara; **ADMINISTRATIVE SUPPORT** Maryrose Madrid **NEWS SENIOR CORRESPONDENT** Jean Marx; **DEPUTY NEWS EDITORS** Robert Coontz, Eliot Marshall, Jeffrey Mervis, Leslie Roberts; **CONTRIBUTING EDITORS** Elizabeth Colutta, Polly Shulman; **NEWS WRITERS** Yudhijit Bhattacharjee, Adrian Cho, Jennifer Couzin, David Grimm, Constance Holden, Jocelyn Kaiser, Richard A. Kerr, Eli Kintisch, Andrew Lawler (New England), Greg Miller, Elizabeth Pennisi, Robert F. Service (Pacific NW), Erik Stokstad; **INTERN** Elsa Youngsteadt; **CONTRIBUTING CORRESPONDENTS** Jon Cohen (San Diego, CA), Daniel Ferber, Ann Gibbons, Robert Ibrion, Mitch Leslie, Charles C. Mann, Virginia Morell, Evelyn Strauss, Gary Taubes; **COPY EDITORS** Rachel Curran, Linda B. Felaco, Melvin Gatliff; **ADMINISTRATIVE SUPPORT** Scherraine Mack, Fannie Groom; **BUREAU** New England: 207-549-7755, San Diego, CA: 760-942-3252, FAX 760-942-4979, Pacific Northwest: 503-963-1940

PRODUCTION DIRECTOR James Landry; **SENIOR MANAGER** Wendy K. Shank; **ASSISTANT MANAGER** Rebecca Doshi; **SENIOR SPECIALISTS** Jay Covert, Chris Redwood; **SPECIALIST** Steve Forrester; **PREFLIGHT DIRECTOR** David M. Tompkins; **MANAGER** Marcus Spiegler; **SPECIALIST** Jessie Mudjitaba **ART DIRECTOR** Kelly Buchheit Krause; **ASSOCIATE ART DIRECTOR** Aaron Morales; **ILLUSTRATORS** Chris Bickel, Katharine Sultiff; **SENIOR ART ASSOCIATES** Holly Bishop, Laura Creveling, Preston Huey, Nayomi Kevithiyagala; **ASSOCIATE** Jessica Newfield; **PHOTO EDITOR** Leslie Blizard

SCIENCE INTERNATIONAL

EUROPE (science-int.co.uk) **EDITORIAL/INTERNATIONAL MANAGING EDITOR** Andrew M. Suggen; **SENIOR EDITOR/PERSPECTIVES** Julia Fahrenkamp-Puppenbrink; **SENIOR EDITORS** Caroline Ash, Stella M. Hurtle, Ian S. Osborne, Stephen J. Simpson, Peter Stern; **EDITORIAL SUPPORT** Deborah Dennison, Rachel Roberts, Alice Whaley; **ADMINISTRATIVE SUPPORT** John Cannell, Janet Clements, Jill White; **NEWS: EUROPE NEWS EDITOR** John Travis; **DEPUTY NEWS EDITOR** Daniel Clerly; **CONTRIBUTING CORRESPONDENTS** Michael Balter (Paris), John Bohannon (Vienna), Martin Eserinck (Amsterdam and Paris), Gretchen Vogel (Berlin); **INTERN** Elizabeth Quill

ASIA Japan Office: Asca Corporation, Eiko Ishioka, Fusako Tamura, 1-8-13, Hirano-cho, Chuo-ku, Osaka-shi, Osaka, 541-0046 Japan; +81 (0) 6 2602 6272, FAX +81 (0) 6 2602 6271; asca@os.gulf.or.jp; **ASIA NEWS EDITOR** Richard Stone (Beijing: rstone@aaas.org); **CONTRIBUTING CORRESPONDENTS** Dennis Normile (Japan: +81 (0) 3 3391 0630, FAX 81 (0) 3 5936 3531; dnormile@ggol.com); Hao Xin (China: +86 (0) 10 6307 4439 or 6307 3676, FAX +86 (0) 10 6307 4358; cindyhao@gmail.com); Pallava Bagla (South Asia: +91 (0) 11 2271 2896; pbagla@vsnl.com)

AFRICA Robert Koenig (contributing correspondent, rob.koenig@gmail.com)

FULFILLMENT SYSTEMS AND OPERATIONS (membership@aaas.org); **DIRECTOR** Waylon Butler; **CUSTOMER SERVICE SUPERVISOR** Pat Butler; **SPECIALISTS** Laurie Baker, Latoya Casteel, LaVonda Crawford, Vicki Linton; **DATA ENTRY SUPERVISOR** Cynthia Johnson; **SPECIALISTS** Tarrika Hill, Erin Layne

BUSINESS OPERATIONS AND ADMINISTRATION DIRECTOR Deborah Rivera-Wienhold; **ASSISTANT DIRECTOR, BUSINESS OPERATIONS** Randy Yi; **SENIOR FINANCIAL ANALYSTS** Michael LoBue, Jessica Tierney; **RIGHTS AND PERMISSIONS: ADMINISTRATOR** Emilie David; **ASSOCIATE** Elizabeth Sandler; **MARKETING DIRECTOR** John Meyers; **MARKETING MANAGERS** Allison Pritchard, Darryl Walter; **MARKETING ASSOCIATES** Aimee Aponte, Alison Chandler, Mary Ellen Crowley, Marcia Leach, Julianne Wielga, Wendy Wise; **INTERNATIONAL MARKETING MANAGER** Wendy Sturley; **MARKETING EXECUTIVE** Jennifer Reeves; **MARKETING/MEMBER SERVICES EXECUTIVE** Linda Rusik; **SITE LICENSE SALES DIRECTOR** Tom Ryan; **SALES MANAGER** Russ Edra; **SALES AND CUSTOMER SERVICE** Mehan Dossani, Iqo Edim, Kiki Forsythe, Catherine Holland, Phillip Smith, Philip Tsolakidis; **ELECTRONIC MEDIA: MANAGER** Lizbeth Harman; **PROJECT MANAGER** Trista Snyder; **ASSISTANT MANAGER** Lisa Stanford; **SENIOR PRODUCTION SPECIALISTS** Christopher Coleman, Walter Jones; **PRODUCTION SPECIALISTS** Nichole Johnston, Kimberly Oster

ADVERTISING DIRECTOR WORLDWIDE AD SALES Bill Moran

PRODUCT (science_advertising@aaas.org); **CONSUMER & SPONSORSHIP SALES MANAGER** Tina Morra: 202-326-6542; **MIDWEST RICK** Bogovannio: 330-405-7080, FAX 330-405-7081; **WEST COAST/W. CANADA** Teola Young: 650-964-2266; **EAST COAST/E. CANADA** Christopher Breslin: 443-512-0330, FAX 443-512-0331; **UK/EUROPE/ASIA** Michelle Field: +44 (0) 1223-326-524, FAX +44 (0) 1223-325-532; **JAPAN** Masayo Yoshikawa: +81 (0) 33235 5961, FAX +81 (0) 33235 5852; **SENIOR TRAFFIC ASSOCIATE** Deandra Simms

COMMERCIAL EDITOR Sean Sanders: 202-326-6430

CLASSIFIED (advertise@sciencecareers.org); **US: RECRUITMENT SALES MANAGER** Ian King: 202-326-6528, FAX 202-289-6742; **INSIDE SALES MANAGER: MIDWEST/CANADA** Daryl Anderson: 202-326-6543; **KEY ACCOUNT MANAGER** Joribah Able; **NORTHEAST** Alexis Fleming: 202-326-6578; **SOUTHEAST** Tina Burks: 202-326-6577; **WEST** Nicholas Hintibidze: 202-326-6533; **SALES COORDINATORS** Erika Foad, Rohan Edmonson, Shirley Young; **INTERNATIONAL: SALES MANAGER** Tracy Holmes: +44 (0) 1223 326525, FAX +44 (0) 1223 326532; **SALES** Marium Hudda, Alex Palmer, Alessandra Sorgente; **SALES ASSISTANT** Louise Moore; **JAPAN** Masayo Yoshikawa +81 (0)3 3235 5961, FAX +81 (0)3 3235 5852; **ADVERTISING PRODUCTION OPERATIONS MANAGER** Deborah Tompkins; **SENIOR PRODUCTION SPECIALISTS** Robert Buck, Amy Hurdcastle; **SENIOR TRAFFIC ASSOCIATE** Christine Hall; **PUBLICATIONS ASSISTANT** Mary Lagnaoui

AAAS BOARD OF DIRECTORS **RETIRING PRESIDENT, CHAIR** John P. Holdren; **PRESIDENT** David Baltimore; **PRESIDENT-ELECT** James J. McCarthy; **TREASURER** David E. Shaw; **CHIEF EXECUTIVE OFFICER** Alan I. Leshner; **BOARD** John P. Dowling, Lynn W. Enquist, Susan M. Fitzpatrick, Alice Gast, Linda P. B. Katehi, Cherry A. Murray, Thomas D. Pollard, Kathryn D. Sullivan



ADVANCING SCIENCE. SERVING SOCIETY

SENIOR EDITORIAL BOARD

John I. Brauman, Chair, Stanford Univ.
Richard Losick, Harvard Univ.
Robert May, Univ. of Oxford
Marcia McClut, Monterey Bay Aquarium Research Inst.
Linda Partridge, Univ. College London
Vera C. Rubin, Carnegie Institution
Christopher R. Somerville, Carnegie Institution
George M. Whitesides, Harvard Univ.

BOARD OF REVIEWING EDITORS

Joanna Aizenberg, Harvard Univ.
R. McNeill Alexander, Leeds Univ.
David Altschuler, Broad Institute
Arturo Alvarez-Buylla, Univ. of California, San Francisco
Richard Amasio, Univ. of Wisconsin, Madison
Angelika Amon, MIT
Meinrat O. Andreae, Max Planck Inst., Mainz
Kristi S. Anseth, Univ. of Colorado
John A. Bargh, Yale Univ.
Cornelia I. Bargmann, Rockefeller Univ.
Marisa Bartolomei, Univ. of Penn. School of Med.
Ray H. Baughman, Univ. of Texas, Dallas
Stephen J. Benkovic, Penn State Univ.
Michael J. Bevan, Univ. of Washington
Ton Bisseling, Wageningen Univ.
Mina Bissell, Lawrence Berkeley National Lab
Peer Bork, EMBL
Dianna Bowles, Univ. of York
Robert W. Boyd, Univ. of Rochester
Paul M. Brakefield, Leiden Univ.
Dennis Bray, Univ. of Cambridge
Stephen Barutowski, Harvard Medical School
Joseph A. Burns, Cornell Univ.
William P. Butz, Population Reference Bureau
Peter Carmeliet, Univ. of Leuven, VIB
Gerbrand Ceder, MIT
Mildred Cho, Stanford Univ.
David Clapham, Children's Hospital, Boston
David Clark, Oxford University
J. M. Claverie, CNRS, Marseille

Jonathan D. Cohen, Princeton Univ.
Stephen M. Cohen, Temasek Life Sciences Lab., Singapore
Robert H. Crabtree, Yale Univ.
F. Fleming Crim, Univ. of Wisconsin
William Cumberland, Univ. of California, Los Angeles
George Q. Daley, Children's Hospital, Boston
Jeff L. Dangl, Univ. of North Carolina
Edward DeLong, MIT
Emmanouil T. Dermitzakis, Wellcome Trust Sanger Inst.
Robert Desimone, MIT
Dennis Discher, Univ. of Pennsylvania
Scott C. Doney, Woods Hole Oceanographic Inst.
Peter J. Donovan, Univ. of California, Irvine
W. Ford Doolittle, Dalhousie Univ.
Jennifer A. Doudna, Univ. of California, Berkeley
Julian Downward, Cancer Research UK
Denis Duboule, Univ. of Geneva/EPFL Lausanne
Christopher Dye, WHO
Richard Ellis, Cal Tech
Gerhard Ertl, Fritz-Haber-Institut, Berlin
Douglas H. Erwin, Smithsonian Institution
Mark Estelle, Indiana Univ.
Parry Everitt, Univ. of Cambridge
Baur G. Falkowski, Rutgers Univ.
Ernst Fehr, Univ. of Zurich
Tom Fenchel, Univ. of Copenhagen
Alain Fischer, INSERM
Scott E. Fraser, Cal Tech
Chris D. Frith, Univ. College London
Wfram Gostane, EPFL Lausanne
Charles Godfrey, Univ. of Oxford
Diane Griffin, Johns Hopkins Bloomberg School of Public Health
Christian Haass, Ludwig Maximilians Univ.
Niels Hansen, Technical Univ. of Denmark
Dennis L. Hartmann, Univ. of Washington
Chris Hawkesworth, Univ. of Bristol
Martin Heimler, Max Planck Inst., Jena
James A. Hendler, Rensselaer Polytechnic Inst.
Ray Hilborn, Univ. of Washington
Ove Hoegh-Guldberg, Univ. of Queensland
Ronald K. Hoy, Cornell Univ.
Evelyn L. Hu, Univ. of California, Santa Barbara
Olli Ikkala, Helsinki Univ. of Technology
Meyer B. Jackson, Univ. of Wisconsin Med. School

Stephen Jackson, Univ. of Cambridge
Steven Jacobsen, Univ. of California, Los Angeles
Peter Jonas, Universität Freiburg
Barbara B. Kahn, Harvard Medical School
Rachel Kaplan, Harvard Univ.
Gerd Karsenty, Columbia Univ. College of P&S
Bernhard Keimer, Max Planck Inst., Stuttgart
Elizabeth A. Kellog, Univ. of Missouri, St. Louis
Alan B. Krueger, Princeton Univ.
Lee Kump, Penn State Univ.
Mitchell A. Lazar, Univ. of Pennsylvania
Virginia Lee, Univ. of Pennsylvania
Anthony J. Leggett, Univ. of Illinois, Urbana-Champaign
Norman L. Letwin, Beth Israel Deaconess Medical Center
Ole Lindahl, Univ. Hospital, Lund
John Lis, Cornell Univ.
Richard Losick, Harvard Univ.
Ke Lu, Chinese Acad. of Sciences
Andrew P. Mackenzie, Univ. of St. Andrews
Richard Madsen, Ecole Normale Supérieure, Paris
Anne Magurran, Univ. of St. Andrews
Michael Malim, King's College, London
Virginia Miller, Washington Univ.
Yasushi Miyashita, Univ. of Tokyo
Richard Morris, Univ. of Edinburgh
Edward Moser, Norwegian Univ. of Science and Technology
Naoito Nagaosa, Univ. of Tokyo
James Nelson, Stanford Univ. School of Med.
Timothy W. Nilsen, Case Western Reserve Univ.
Rosland Noltze, Univ. of Nijmegen
Helga Nowotny, European Research Advisory Board
Eric N. Olson, Univ. of Texas, SW
Erin O'Shea, Harvard Univ.
Elinor Ostrom, Indiana Univ.
Jonathan T. Overpeck, Univ. of Arizona
John Pendry, Imperial College
Philippe Poulin, CNRS
Mary Power, Univ. of California, Berkeley
Molly Przeworski, Univ. of Chicago
David I. Read, Univ. of Sheffield
Liz Reag, Emory Univ.
Colin Renfrew, Univ. of Cambridge
Trevor Robbins, Univ. of Cambridge
Barbara A. Romanowicz, Univ. of California, Berkeley
Nancy Ross, Virginia Tech

Edward M. Rubin, Lawrence Berkeley National Lab
J. Roy Sambles, Univ. of Exeter
Jürgen Sandkühler, Medical Univ. of Vienna
David S. Schimel, National Center for Atmospheric Research
David W. Schindler, Univ. of Alberta
Georg Schulz, Albert-Ludwigs-Universität
Paul Schulze-Lefert, Max Planck Inst., Cologne
Christine Seidman, Harvard Medical School
Terrence J. Sejnowski, The Salk Institute
David Sibley, Washington Univ.
Montgomery Slatkin, Univ. of California, Berkeley
George Somero, Stanford Univ.
Ioan Steitz, Yale Univ.
Ebeth Stern, ETH Zürich
Thomas Stocker, Univ. of Bern
Jenna Strauss, Virginia Commonwealth Univ.
Glenn Telling, Univ. of Kentucky
Mark Tessier-Lavigne, Genentech
Michiel van der Klis, Astronomical Institute of Amsterdam
Derek van der Kooy, Univ. of Toronto
Bert Vogelstein, Johns Hopkins Univ.
Christopher A. Walsh, Harvard Medical School
Graham Warren, Yale Univ. School of Med.
Jan Zwarts, Univ. of Dundee
Detlef Weigel, Max Planck Inst., Tübingen
Jonathan Weissman, Univ. of California, San Francisco
Ellen D. Williams, Univ. of Maryland
Ian A. Wilson, The Scripps Res. Inst.
Jerry Workman, Stowers Inst. for Medical Research
John R. Yates III, The Scripps Res. Inst.
Dan Zaanen, Leiden Univ.
Martin Zatz, NIMH
Huda Zoghbi, Baylor College of Medicine
Nicole Zuber, MIT

BOOK REVIEW BOARD

John Aldrich, Duke Univ.
David Bloom, Harvard Univ.
Angela Creager, Princeton Univ.
Richard Schweder, Univ. of Chicago
Ed Wasserman, DuPont
Lewis Wolpert, Univ. College London