

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 2LQ

+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 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 https://bsd.officepoint.com/portalLogin.do; Seabury & Smith Life Insurance 800-424-9883; Subaru VIP Program 202-326-6417; VIP Moving Services 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 positions 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, engineering, and innovation throughout the world for the benefit of all people. The goals of the association are to: enhance communication among scientists, engineers, and the public; promote and defend the integrity of science and its use; strengthen support for the science and technology enterprise; provide a voice for science on societal issues; promote the responsible use of science in public policy; strengthen and diversify the science and technology workforce; foster education in science and technology for everyone; increase public engagement with science and technology; and advance international cooperation in science.

INFORMATION FOR AUTHORS

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

EDITOR-IN-CHIEF **Bruce Alberts**

EXECUTIVE EDITOR **Monica M. Bradford**

DEPUTY EDITORS NEWS EDITOR

R. Brooks Hanson, Barbara R. Jasny, Colin Norman
Katrina L. Kellner

EDITORIAL SUPERVISORY SENIOR EDITOR Phillip D. Szurromi; **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; **ASSOCIATE EDITORS** Kristen L. Mueller, Jake S. Yeston, Laura M. Zahn; **ONLINE EDITOR** Stewart Mills; **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 Kmcic; **EDITORIAL COORDINATORS** Carolyn Kyle, Beverly Shields; **PUBLICATIONS ASSISTANTS** Ramatoulaye Djou, Joi S. Granger, Jeffrey Hearn, Lisa Johnson, Scott Miller, Jerry Richardson, Jennifer A. Seibert, Brian White, Anita Wynn; **EDITORIAL ASSISTANTS** Carlos L. Durham, Emily Guise, Patricia M. Moore; **EXECUTIVE ASSISTANT** Sylvia S. Kihara; **ADMINISTRATIVE SUPPORT** Maryrose Madrid

NEWS DEPUTY NEWS EDITORS Robert Coontz, Eliot Marshall, Jeffrey Mervis, Leslie Roberts; **CONTRIBUTING EDITORS** Elizabeth Culotta, 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** Jackie D. Grom; **CONTRIBUTING CORRESPONDENTS** Jon Cohen (San Diego, CA), Daniel Ferber, Ann Gibbons, Robert Koenig, Mitch Leslie, Charles C. Mann, Virginia Morell, Evelyn Strauss, Guy Taubes; **COPY EDITORS** Linda B. Felaco, Melvin Gatling, Melissa Raimondi; **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** Steve Forrester, Chris Redwood; **SPECIALIST** Anthony Rosen; **PREFLIGHT DIRECTOR** David M. Tompkins; **MANAGER** Marcus Spiegel

ART DIRECTOR Yael Kats; **ASSOCIATE ART DIRECTOR** Laura Creveling; **ILLUSTRATORS** Chris Bickel, Katharine Sutliff; **SENIOR ART ASSOCIATES** Holly Bishop, Preston Huey, Nayomi Kevitiyagala; **ART ASSOCIATE** Jessica Newfield; **PHOTO EDITOR** Leslie Blizard

SCIENCE INTERNATIONAL

EUROPE (science@science-int.com) **EDITORIAL: INTERNATIONAL MANAGING EDITOR** Andrew M. Sugden; **SENIOR EDITOR/PERSPECTIVES** Julia Fahrenkamp-Uppenbrink; **SENIOR EDITORS** Caroline Ash, Stella M. Hurtle, Ian S. Osborne, Peter Stern; **ASSOCIATE EDITOR** Maria Cruz; **EDITORIAL SUPPORT** Deborah Dennison, Rachel Roberts, Alice Whaley; **ADMINISTRATIVE SUPPORT** John Cannell, Janet Clements; **NEWS: EUROPE NEWS EDITOR** John Travis; **DEPUTY NEWS EDITOR** Daniel Clerj; **CONTRIBUTING CORRESPONDENTS** Michael Balter (Paris), John Bohannon (Vienna), Martin Enserink (Amsterdam and Paris), Gretchen Vogel (Berlin); **INTERN** Sara Coelho

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@gol.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)

EXECUTIVE PUBLISHER **Alan I. Leshner**

PUBLISHER **Beth Rosner**

FULFILLMENT SYSTEMS AND OPERATIONS (membership@aaas.org); **DIRECTOR** Waylon Butler; **SENIOR SYSTEMS ANALYST** Jonny Blaker; **CUSTOMER SERVICE SUPERVISOR** Pat Butler; **SPECIALISTS** Latoya Casteel, LaVonda Crawford, Vicki Linton, April Marshall; **DATA ENTRY SUPERVISOR** Cynthia Johnson; **SPECIALISTS** Eintou Bowden, Tarrika Hill, William Jones

BUSINESS OPERATIONS AND ADMINISTRATION DIRECTOR Deborah Rivera-Wienhold; **ASSISTANT DIRECTOR, BUSINESS OPERATIONS** Randy Yi; **JANICER, BUSINESS ANALYST** Michael LoBue; **MANAGER, BUSINESS OPERATIONS** Jessica Tierney; **FINANCIAL ANALYSTS** Priti Pamnani, Celeste Troxler; **RIGHTS AND PERMISSIONS: ADMINISTRATOR** Emilie David; **ASSOCIATE** Elizabeth Sandler; **MARKETING DIRECTOR** Ian King; **MARKETING MANAGER** Allison Pritchard; **MARKETING ASSOCIATES** Aimee Aponte, Alison Chandler, Mary Ellen Crowley, Julianne Wielga, Wendy Wise; **INTERNATIONAL MARKETING MANAGER** Wendy Sturley; **MARKETING EXECUTIVE** Jennifer Reeves; **MARKETING/MEMBER SERVICES EXECUTIVE** Linda Rusk; **DIRECTOR, SITE LICENSING** Tom Ryan; **DIRECTOR, CORPORATE RELATIONS** Eileen Bernadette Moran; **PUBLISHER RELATIONS, RESOURCES SPECIALIST** Kiki Forsythe; **SENIOR PUBLISHER RELATIONS SPECIALIST** Catherine Holland; **PUBLISHER RELATIONS, EAST COAST** Phillip Smith; **PUBLISHER RELATIONS, WEST COAST** Philip Tsolakidis; **FULFILLMENT SUPERVISOR** Iquo Edim; **FULFILLMENT COORDINATOR** Laura Clemens; **ELECTRONIC MEDIA: MANAGER** Elizabeth 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); **MIDWEST/WEST COAST/W. CANADA** Rick Bongiovanni: 330-405-7080, FAX 330-405-7081; **EAST COAST/E. CANADA** Laurie Faraday: 508-747-9395, FAX 617-507-8189; **UK/EUROPE/ASIA** Roger Goncalves: TEL/FAX +41 43 243 1358; **JAPAN** Masuyoshi Yoshikawa: +81 (0) 3 3235 5916, FAX +81 (0) 3 3235 5852; **SENIOR TRAFFIC ASSOCIATE** Delairinda Simms

COMMERCIAL EDITOR Sean Sanders: 202-326-6430

PROJECT DIRECTOR, OUTREACH Brianna Blaser

CLASSIFIED (advertise@sciencecareers.org); **INSIDE SALES MANAGER: MIDWEST/CANADA** Daryl Anderson: 202-326-6543; **INSIDE SALES REPRESENTATIVE** Karen Foote: 202-326-6740; **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** Rohan Edmonson, Shirley Young; **INTERNATIONAL SALES MANAGER** Tracy Holmes: +44 (0) 1223 326525, FAX +44 (0) 1223 326532; **SALES** Susanne Kharraz, Dan Pennington, Alex Palmer; **SALES ASSISTANT** Louise Moore; **JAPAN** Masuyoshi Yoshikawa: +81 (0) 3 3235 5961, FAX +81 (0) 3 3235 5852; **ADVERTISING PRODUCTION OPERATIONS MANAGER** Deborah Tompkins; **SENIOR PRODUCTION SPECIALIST/GRAPHIC DESIGNER** Amy Hardcastle; **SENIOR PRODUCTION SPECIALIST** Robert Buck; **SENIOR TRAFFIC ASSOCIATE** Christine Hall; **PUBLICATIONS ASSISTANT** Mary Lagnaoui

AAAS BOARD OF DIRECTORS **RETIRING PRESIDENT, CHAIR** David Baltimore; **PRESIDENT** James J. McCarthy; **PRESIDENT-ELECT** Peter C. Agre; **TREASURER** David E. Shaw; **CHIEF EXECUTIVE OFFICER** Alan I. Leshner; **BOARD** Lynn W. Enquist, Susan M. Fitzpatrick, Alice Gast, Linda P. B. Kateh, Nancy Knowlton, Cheryl A. Murray, Thomas D. Pollard, Thomas A. Woolsey



ADVANCING SCIENCE. SERVING SOCIETY

SENIOR EDITORIAL BOARD

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

BOARD OF REVIEWING EDITORS

Joanna Aizenberg, Harvard Univ.
David Altshuler, Broad Institute
Arturo Alvarez-Buylla, Univ. of California, San Francisco
Richard Amasino, 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.
Ben Barres, Stanford Medical School
Marisa Bartolomei, Univ. of Penn. School of Med.
Facundo Batista, London Research Inst.
Ray H. Baughman, Univ. of Texas, Dallas
Stephen J. Benkovic, Penn State Univ.
Tou Bisseling, Wageningen Univ.
Mina Bissell, Lawrence Berkeley National Lab
Peer Bork, EMBL
Robert W. Boyd, Univ. of Rochester
Paul M. Brakefield, Leiden Univ.
Dennis Bray, Univ. of Cambridge
Stephen Buratowski, Harvard Medical School
Joseph A. Burns, Cornell Univ.
William P. Butz, Population Reference Bureau
Mats Carlsson, Univ. of Oslo
Peter Carmeliet, Univ. of Leuven, VIB
Mildred Cho, Stanford Univ.
David Clapham, Children's Hospital, Boston
David Clary, Oxford University
J. M. Claverie, CNRS, Marseille
Jonathan D. Cohen, Princeton Univ.

Andrew Cossins, Univ. of Liverpool
Robert H. Crabtree, Yale Univ.
Wolfgang Cramer, Potsdam Inst. for Climate Impact Research
F. Fleming Crim, Univ. of Wisconsin
William Cumberland, Univ. of California, Los Angeles
Jeff L. Dangl, Univ. of North Carolina
Stanislas Dehaene, Collège de France
Edward DeLong, MIT
Emmanouil T. Dermatzakis, Wellcome Trust Sanger Inst.
Robert Desimone, MIT
Dennis Discher, Univ. of Pennsylvania
Scott C. Doney, Woods Hole Oceanographic Inst.
W. Ford Doolittle, Dalhousie Univ.
Jennifer A. Doudna, Univ. of California, Berkeley
Julian Downward, Cancer Research UK
Denis Duboué, Univ. of Geneva/EPL Lausanne
Christopher Dye, WHO
Gerhard Ertl, Fritz-Haber-Institut, Berlin
Mark Estelle, Indiana Univ.
Barry Everitt, Univ. of Cambridge
Paul G. Falkowski, Rutgers Univ.
Ernst Fehr, Univ. of Zurich
Tom Fenichel, Univ. of Copenhagen
Alain Fischer, INSERM
Scott E. Fraser, Cal Tech
Chris D. Frith, Univ. College London
Wulfraam Gerstner, 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 Heimann, Max Planck Inst., Jena
James A. Hendler, Rensselaer Polytechnic Inst.
Ray Hilborn, Univ. of Washington
Ove Hoegh-Guldberg, Univ. of Queensland
Bridget L. M. Hogan, Duke Univ. Medical Center
Ronald R. Hoy, Cornell Univ.
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
Daniel Kahne, Harvard Univ.
Gerard Karsenty, Columbia Univ. College of P&S
Bernhard Keimer, Max Planck Inst., Stuttgart
Elizabeth A. Kellom, 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
Olle Lindvall, Univ. Hospital, Lund
Marcia C. Linn, Univ. of California, Berkeley
John Lis, Cornell Univ.
Richard Losick, Harvard Univ.
Ke Lu, Chinese Acad. of Sciences
Andrew P. Mackenzie, Univ. of St Andrews
Raul Madariaga, Ecole Normale Supérieure, Paris
Anne Magurran, Univ. of St Andrews
Charles Marshall, Harvard Univ.
Virginia Miller, Washington Univ.
Yasushi Miyashita, Univ. of Tokyo
Richard Morris, Univ. of Edinburgh
Edvard Moser, Norwegian Univ. of Science and Technology
Naoaki Nagaosa, Univ. of Tokyo
James Nelson, Stanford Univ. School of Med.
Timothy W. Nilsen, Case Western Reserve Univ.
Roeland Nolte, Univ. of Nijmegen
Helga Nowotny, European Research Advisory Board
Eric N. Olson, Univ. of Texas, SW
Stuart H. Orkin, Dana-Farber Cancer Inst.
Erin O'Shea, Harvard Univ.
Elinor Ostrom, Indiana Univ.
Jonathan T. Overpeck, Univ. of Arizona
John Pendry, Imperial College
Simon Phillipot, Univ. of Florida
Philippe Poulin, CNRS
Molly Power, Univ. of California, Berkeley
Molly Przeworski, Univ. of Chicago
Colin Renfrew, Univ. of Cambridge
Trevor Robbins, Univ. of Cambridge
Barbara A. Romanowicz, Univ. of California, Berkeley
Edward M. Rubin, Lawrence Berkeley National Lab
Shimon Sakaguchi, Kyoto Univ.
Jürgen Sandkühler, Medical Univ. of Vienna

David W. Schindler, Univ. of Alberta
Georg Schulz, Albert-Ludwigs-Universität
Paul Schulze-Lefert, Max Planck Inst., Cologne
Christine Seidman, Harvard Medical School
Terence J. Sejnowski, The Salk Institute
David Sibley, Washington Univ.
Joseph Silk, Univ. of Oxford
Montgomery Slatkin, Univ. of California, Berkeley
Davor Solter, Inst. of Medical Biology, Singapore
Joan Steitz, Yale Univ.
Elisbeth Stern, ETH Zurich
Jerome Strassman, Virginia Commonwealth Univ.
Jürg Tschopp, Univ. of Lausanne
Derek van der Kooy, Univ. of Toronto
Bert Vogelstein, Johns Hopkins Univ.
Ulrich H. von Andrian, Harvard Medical School
Bruce D. Walker, Harvard Medical School
Christopher A. Walsh, Harvard Medical School
Graham Warren, Yale Univ. School of Med.
Clon Watkins, 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
Xiaohu Sunney Xie, Harvard Univ.
John R. Yates III, The Scripps Res. Inst.
Tan Jaanzen, Leiden Univ.
Huda Zoghbi, Baylor College of Medicine
Maria Zuber, MIT

BOOK REVIEW BOARD

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