

EXECUTIVE EDITOR
Monica M. Bradford
Colin Norman

MANAGING EDITOR, RESEARCH JOURNALS **Katrina L. Kelner**
DEPUTY EDITORS **R. Brooks Hanson, Barbara R. Jasny, Andrew M. Sugden, Valda J. Vinson**

EDITORIAL SENIOR EDITORS/COMMENTARY **Lisa D. Chong, Brad Wible**; 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, Phillip D. Szuroim (Tennessee), Valda Vinson, Jake S. Yeston, Laura M. Zahn (San Diego)**; ASSOCIATE EDITORS **Kristen L. Mueller, Jelena Stajic, Sacha Vignieri, Nicholas S. Wigginton**; BOOK REVIEW EDITOR **Sherman J. Suter**; ASSOCIATE LETTERS EDITOR **Jennifer Silis**; EDITORIAL MANAGER **Cara Tate**; SENIOR COPY EDITORS **Jeffrey E. Cook, Cynthia Howe, Harry Jach, Lauren Kmec, Barbara P. Ordway, Trista Wagoner**; COPY EDITOR **Chris Filialetau**; SENIOR EDITORIAL COORDINATORS **Carolyn Kyle, Beverly Shields**; EDITORIAL COORDINATORS **Joi S. Granger, Anita Wynn**; PUBLICATIONS ASSISTANTS **Ramatoulaye Diop, Aneera Dobbins, Jeffrey Hearn, Lisa Johnson, Dona Mathieu, Le-Toya Mayne Flood, Shannon McMahon, Scott Miller, Jerry Richardson, Teresa R. Sakon, Brian White**; EDITORIAL ASSISTANT **Patricia M. Moore**; EXECUTIVE EDITOR ASSISTANT **Yolanda O'Bannon (San Francisco)**; EXECUTIVE ASSISTANT **Alison Crawford**; ADMINISTRATIVE SUPPORT **Mayrose Madrid**; EDITORIAL FELLOW **Melissa R. McCartney**

EDITORIAL DIRECTOR, WEB AND NEW MEDIA **Stewart Willis**; SENIOR WEB EDITOR **Sarah Crespi**; WEB EDITOR **Kerry Klein**; WEB DEVELOPMENT MANAGER **Marty Green**; WEB DEVELOPERS **Corinna Cohn, Andrew Whitesell**; INTERN **Edward Hurme**
NEWS DEPUTY NEWS EDITORS **Robert Coontz, David Grimm (Online), Eliot Marshall, Jeffrey Meurer, Leslie Roberts, John Travis**; CONTRIBUTING EDITORS **Elizabeth Culotta, Polly Shulman**; NEWS WRITERS **Yudhijit Bhattacharjee, Adrian Cho, Jennifer Couzin-Frankel, Carolyn Gramling, Jocelyn Kaiser, Richard A. Kerr, David Malachuk, Greg Miller, Elizabeth Pennisi, Robert F. Service (Pacific NW), Erik Stokstad**; WEB DEVELOPER **Daniel Berger**; SOCIAL MEDIA STRATEGIST **Meghna Sachdev**; INTERN **Emily Underwood**; CONTRIBUTING CORRESPONDENTS **John Bohannon, Jon Cohen (San Diego, CA), Ann Gibbons, Sam Kean, Eli Kintisch, Andrew Lawler, Mitch Leslie, Charles C. Mann, Virginia Morell, Gary Taubes**; COPY EDITORS **Melissa Raimondi, Kara Estelle, Linda B. Felaco**; ADMINISTRATIVE SUPPORT **Scherraine Mack**; BUREAUS **San Diego, CA: 760-942-3252, FAX 760-942-4979; Pacific Northwest: 503-963-1940**

PRODUCTION DIRECTOR **Wendy K. Shank**; ASSISTANT MANAGERS **Rebecca Doshi, Lori Murphy**; SENIOR SPECIALISTS **Steve Forrester, Christopher Redwood, Anthony Rosen**; PREFLIGHT DIRECTOR **David M. Tompkins**; MANAGER **Marcus Spiegler**; SPECIALISTS **Jason Hillman, Tara Kelly**
ART DIRECTOR **Yael Fitzpatrick**; ASSOCIATE ART DIRECTOR **Laura Creveling**; SENIOR ILLUSTRATORS **Chris Bickel, Katharine Sutfill**; ILLUSTRATOR **Yana Hammond**; SENIOR ART ASSOCIATES **Holly Bishop, Preston Howe**; ART ASSOCIATES **Kay Engman, Garvin Grullón, Chrystal Smith**; PHOTO EDITOR **Leslie Blizard**

SCIENCE INTERNATIONAL

EUROPE (science@science-int.co.uk) EDITORIAL: INTERNATIONAL MANAGING EDITOR **Andrew M. Sugden**; SENIOR EDITOR/COMMENTARY **Julia Fahrenkamp-Appenbrink**; SENIOR EDITORS **Caroline Ash, Stella M. Hurtle, Ian S. Osborne, Peter Stern**; ASSOCIATE EDITOR **Maria Cruz**; CONTRIBUTING EDITOR **Helen Pickersgill**; EDITORIAL SUPPORT **Rachel Roberts, Alice Whaley**; ADMINISTRATIVE SUPPORT **Janet Clements, John Wood**; NEWS: DEPUTY NEWS EDITOR, **U.K. Daniel Clery**; CONTRIBUTING EDITOR, EUROPE **Martin Enserink**; CONTRIBUTING CORRESPONDENTS **Michael Balter (Paris), Kai Kupferschmidt (Berlin), Gretchen Vogel (Berlin)**

ASIA Japan Office: **Asca Corporation, Tomoko Furusawa, Rustic Bldg. 7F, 77 Tenjin-cho, Shinjuku-ku, Tokyo 162-0808, Japan**; +81 3 6802 4616, FAX +81 3 6802 4615, inquiry@sciencemag.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)**: cindyhao@gmail.com; **Mara Hvistendahl (China)**: mhvisten@aaas.org; **Pallava Bagla (South Asia)**: +91 (0) 11 2271 2896; pbagla@vsnl.com]

FULFILLMENT SYSTEMS AND OPERATIONS (membership@aaas.org); CUSTOMER SERVICE SUPERVISOR **Pat Butler**; SPECIALISTS **LaToya Casteel, Michelle Ofordire, April Marshall**; MANAGER, DATA ENTRY **Mickie Napoleoni**; DATA ENTRY SPECIALISTS **Tarrika Hill, JJ Regan, Eva Mae Campbell**

BUSINESS OPERATIONS AND ADMINISTRATION DIRECTOR **Deborah Rivera-Wienhold**; BUSINESS SYSTEMS AND FINANCIAL ANALYSIS DIRECTOR **Randy Yi**; MANAGER, FULFILLMENT SYSTEMS **Frits Bunnigh**; SYSTEMS ANALYST **Nicole Mehmedovich**; MANAGER, BUSINESS ANALYSIS **Eric Knott**; MANAGER, BUSINESS OPERATIONS **Jessica Tierney**; BUSINESS ANALYSTS **Cory Lipman, Celeste Troxler**; Christine Wehrli; FINANCIAL ANALYST **Julia Nguyen**; RIGHTS AND PERMISSIONS: ADMINISTRATOR **Emilie David**; ASSOCIATE **Elizabeth Sandler**; MARKETING DIRECTOR **Jan King**; MARKETING MANAGERS **Allison Pritchard, Alison Chandler, Julieanne Wielga, Samantha Smith**; MARKETING ASSOCIATES **Aimee Aponte, Mary Ellen Crowley, Elizabeth Sattler, Rebecca Riffkin**; SENIOR MARKETING EXECUTIVE **Jennifer Reeves**; DIRECTOR, SITE LICENSING **Tom Ryan**; DIRECTOR, CORPORATE RELATIONS **Eileen Bernadette Moran**; SENIOR PUBLISHER RELATIONS SPECIALIST **Kiki Forsythe**; PUBLISHER RELATIONS MANAGER **Catherine Holland**; PUBLISHER RELATIONS, EASTERN REGION **Keith Layson**; PUBLISHER RELATIONS, WESTERN REGION **Ryan Rexroth**; CUSTOMER RELATIONS MANAGER **Iqoo Edim**; MARKETING MANAGER **Christina Schlecht**; MARKETING ASSOCIATES **Paulina Curto, Mitchell Edmund**; CUSTOMER RELATIONS ASSOCIATE: **Joe Horn**; ELECTRONIC MEDIA: DIRECTOR **Lizbeth Harman**; ASSISTANT MANAGER **Lisa Stanford**; PRODUCTION SPECIALISTS **Antoinette Hodal, Thomas Jaensch, Nichole Johnston, Kimberly Oster**; WEB AND NEW MEDIA: SENIOR PROJECT MANAGER **Trista Smith**, PROJECT LEADER **Luke Johnson**; COMPUTER SPECIALISTS **Walter Jones, Kai Zhang**; WEB DEVELOPER **Jeremy Bates**; PROGRAM DIRECTOR, AAAS MEMBER CENTRAL **Peggy Mihelich**

DIRECTOR, GLOBAL COOPERATION, CUSTOM PUBLICATIONS, ADVERTISING **Bill Moran**

COMMERCIAL EDITOR **Sean Sanders**: 202-326-6430

ASSISTANT COMMERCIAL EDITOR **Tianna Hickin**: 202-326-6463

PRODUCT (science_advertising@aaas.org); MIDWEST **Rick Bongiovanni**: 330-405-7080, FAX 330-405-7081; EAST COAST/E. CANADA **Laurie Faraday**: 508-747-9395, FAX 617-507-8189; WEST COAST/W. CANADA **Lynne Stickrod**: 415-931-9782, FAX 415-520-6940; UK/EUROPE/ASIA **Roger Gonçalves**: TEL/FAX +41 43 243 1358; JAPAN, **Makiko Hara**: +81 (0) 3 6802 4616, FAX +81 (0) 3 6802 4615; ads@sciencemag.jp; CHINA/TAIWAN **Ruoli Wu**: +86 1367 1015 294 ruwu@aaas.org

WORLDWIDE ASSOCIATE DIRECTOR OF SCIENCE CAREERS **Tracy Holmes**: +44 (0) 1223 326525, FAX +44 (0) 1223 326532

CLASSIFIED (advertise@sciencereaders.org); U.S.: MIDWEST/WEST COAST/CANADA/SOUTH AMERICA **Tina Burks**: 202-326-6577; EAST COAST/INDUSTRY **Elizabeth Early**: 202-326-6578; SALES ADMINISTRATOR **Marci Gallun**; EUROPE/ROW SALES **Simone Jux, Lucy Nelson**; SALES ASSISTANT **Kelly Grace**; JAPAN **Yuri Kobayashi**: +81 (6) 6627-9250; careerads@sciencemag.jp; CHINA/TAIWAN **Ruoli Wu**: +86 1367 1015 294 ruwu@aaas.org; ADVERTISING SUPPORT MANAGER **Karen Foote**: 202-326-6740; ADVERTISING PRODUCTION OPERATIONS MANAGER **Deborah Tompkins**; SENIOR PRODUCTION SPECIALIST/GRAPHIC DESIGNER **Amy Hardcastle**; PRODUCTION SPECIALIST **Yuse Lajminmuhip**; SENIOR TRAFFIC ASSOCIATE **Christine Hall**; SALES COORDINATOR **Shirley Young**

AAAS BOARD OF DIRECTORS RETIRING PRESIDENT, **Chair Nina V. Fedoroff**; PRESIDENT **William H. Press**; PRESIDENT-ELECT **Phillip A. Sharp**; TREASURER **David E. Shaw**; CHIEF EXECUTIVE OFFICER **Alan I. Leshner**; BOARD **May R. Berenbaum, Bonnie L. Bassler, Stephen L. Mayo, Raymond Orbach, Julia M. Phillips, Sue V. Rosser, David D. Sabatini, Inder M. Verma**



ADVANCING SCIENCE. SERVING SOCIETY

INFORMATION FOR AUTHORS

See pages 752 and 753 of the 10 February 2012 issue or access www.sciencemag.org/about/authors

SENIOR EDITORIAL BOARD

A. Paul Alivisatos, Lawrence Berkeley Nat'l. Laboratory
Cori Bargmann, The Rockefeller Univ.
Ernst Fehr, Univ. of Zurich
Erin O'Shea, Harvard Univ.
Michael S. Turner, University of Chicago

BOARD OF REVIEWING EDITORS

Adriano Aguzzi, Univ. Hospital Zurich
Takuzo Aida, Univ. of Tokyo
Sonia Altizer, Univ. of Georgia
Sebastian Amigorena, Institut Curie
Angelika Amon, MIT
Kathryn Anderson, Memorial Sloan-Kettering Cancer Center
Siv G. E. Andersson, Uppsala Univ.
Peter Andolfatto, Princeton Univ.
Meinrat O. Andreae, Max Planck Inst., Mainz
Johan Auwerx, EPFL, St. Andrews
David Auschlo, Univ. of California Santa Barbara
Ben Barres, Stanford Medical School
Jordi Bascompte, Estación Biológica de Doñana, CSIC
Facundo Batista, London Research Inst.
Ray H. Baughman, Univ. of Texas, Dallas
David Baum, Univ. of Wisconsin
Mark Bear, Massachusetts Inst. of Technology
Yasmine Belkaid, NIAID, NIH
Philip Benfey, Duke Univ.
Stephen J. Benkovic, Penn State Univ.
Gregory C. Berzox, Stanford Univ.
Gabriele Bergers, Univ. of California, San Francisco
Peer Bork, EMBL
Bernard Bourdon, Ecole Normale Supérieure de Lyon
Ian Boyd, Univ. of St. Andrews
Christian Büchel, Universitätsklinikum Hamburg-Eppendorf
Joseph A. Burns, Cornell Univ.
William P. Butz, Population Reference Bureau
György Buzsáki, New York Univ., School of Medicine
Kats Carlson, Univ. of Oslo
Mildred Cho, Stanford Univ.
David Clapham, Children's Hospital, Boston
David Clary, Univ. of Oxford
Jonathan D. Cohen, Princeton Univ.
Robert Cook-Deegan, Duke Univ.
James Collins, Boston Univ.
Alan Cowman, Walter & Eliza Hall Inst.
Robert H. Crabtree, Yale Univ.
Wolfgang Cramer, Mediterranean Inst. of Biodiversity and Ecology
F. Fleming Crim, Univ. of Wisconsin
Jeff L. Dangl, Univ. of North Carolina
Tom Daniel, Univ. of Washington

Frans de Waal, Emory Univ.
Stanislas Dehaene, Collège de France
Robert Desimone, MIT
Claude Desplan, New York Univ.
Ar Dijkstra, Radboud Univ. of Nijmegen
Dennis Discher, Univ. of Pennsylvania
Gerald W. Dorn II, Washington Univ. School of Medicine
Jennifer A. Doudna, Univ. of California, Berkeley
Julian Downward, Cancer Research UK
Stacie Dunn, Univ. of California, Los Angeles
Christopher Dye, WHO
David Ehrhardt, Carnegie Inst. of Washington
Tim Elston, Univ. of North Carolina at Chapel Hill
Gerhard Ertl, Fritz-Haber-Institut, Berlin
Barry Everitt, Univ. of Cambridge
Paul G. Falkowski, Rutgers Univ.
Ernst Fehr, Univ. of Zurich
Tom Fenchel, Univ. of Copenhagen
Michael Feuer, The George Washington Univ.
Alain Fischer, INSERM
Susan Fiske, Princeton Univ.
Anne C. Ferguson-Smith, Univ. of Cambridge
Wulfraut Gerstner, EPFL Lausanne
Karl Heinz Glassmeier, TU Braunschweig
Elizabeth Grove, Univ. of Chicago
Kip Guy, St. Jude's Children's Research Hospital
Taejip Ha, Univ. of Illinois at Urbana-Champaign
Christian Haass, Ludwig Maximilians Univ.
Steven Hahn, Fred Hutchinson Cancer Research Center
Gregory J. Hannon, Cold Spring Harbor Lab.
Martin Heimann, Max Planck Inst., Jena
Isaac Held, NOAA
James A. Hendler, Rensselaer Polytechnic Inst.
Janet G. Hering, Swiss Fed. Inst. of Aquatic Science & Technology
Ray Hilborn, Univ. of Washington
Michael E. Himmel, National Renewable Energy Lab.
Kai-Uwe Hinrichs, Univ. of Bremen
Thomas Hudson, Tokyo Inst. of Technology
David Holdell, Univ. of Cambridge
David Holden, Imperial College
Lora Hooper, UT Southwestern Medical Ctr at Dallas
Jeffrey A. Hubbell, EPFL Lausanne
Thomas Hudson, Ontario Inst. for Cancer Research
Steven Jacobsen, Univ. of California, Los Angeles
Kai Johnson, EPFL Lausanne
Peter Jonas, Universität Freiburg
William Kaelin Jr., Dana-Farber Cancer Inst.
Daniel Kahne, Harvard Univ.
Daniel Kammen, Univ. of California, Berkeley
Joel Kingsolver, Univ. of North Carolina at Chapel Hill

Robert Kingston, Harvard Medical School
Robert Kolter, Harvard Medical School
Alberto R. Kornblith, Univ. of Buenos Aires
Leonid Kruglyak, Princeton Univ.
Thomas Lange, Univ. of Cologne
Mitchell A. Lazar, Univ. of Pennsylvania
David Lazer, Harvard Univ.
Virginia Lee, Univ. of Pennsylvania
Ottoline Leyser, Cambridge Univ.
Olle Lindvall, Univ. Hospital, Lund
Marcia C. Linn, Univ. of California, Berkeley
John Lis, Cornell Univ.
Jiangyao Liu, Michigan State Univ.
Jonathan Losos, Harvard Univ.
Ke Liu, Chinese Acad. of Sciences
Laura Machesky, CRUK Beatson Inst. for Cancer Research
Edward Moser, Norwegian Univ. of Science and Technology
Sean Munro, MRC Lab. of Molecular Biology
Thomas Murray, The Hastings Center
Naoto Nagaosa, Univ. of Tokyo
James Nelson, Stanford Univ. School of Med.
Timothy W. Nilsen, Case Western Reserve Univ.
Pär Nordlund, Karolinska Inst.
Helga Nowotny, European Research Advisory Board
Luke O'Neill, Trinity College, Dublin
Stuart Newman, New York Medical College
N. Phyllis Ong, Princeton Univ.
Joe Orenstein, Univ. of California, Berkeley & Lawrence Berkeley National Lab
Stuart H. Orkin, Dana-Farber Cancer Inst.
Harry Orr, Univ. of Minnesota
Andrew Orrison, MIT
Andrew Oswald, Univ. of Warwick
Steve Palumbi, Stanford Univ.
Jane Parker, Max-Planck Inst. of Plant Breeding Research
Donald R. Paul, Univ. of Texas at Austin
R. David Pearson, Univ. of California, Berkeley
Reginald M. Penner, Univ. of California, Irvine
John H. J. Petrini, Memorial Sloan-Kettering Cancer Center
Simon Philpot, Univ. of Florida
Joshua Potkin, Univ. of Pennsylvania
John Pridmore, Penn. State Univ.
CNRS
Chris Renfrew, Univ. of Cambridge
Trevor Robbins, Univ. of Cambridge

Barbara A. Romanowicz, Univ. of California, Berkeley
Jens Rostrup-Nielsen, Haldor Topsoe
Mike Ryan, Univ. of Texas, Austin
Shimom Sakaguchi, Kyoto Univ.
Michael Salmeron, Lawrence Berkeley National Lab
Jürgen Sandkühler, Medical Univ. of Vienna
Randy Seeley, Univ. of Cincinnati
Vladimir Shalaev, Purdue Univ.
Joseph Silk, Institut d'Astronomie de Paris
Daniel Simon, Arizona State Univ.
Alison Smith, John Innes Centre
Davor Solter, Inst. of Medical Biology, Singapore
Peter Sorger, Harvard Medical School
John Speakman, Univ. of Aberdeen
Allan C. Spradling, Carnegie Institution of Washington
Jonathan Sprent, Garvan Inst. of Medical Research
Paula Stephan, Georgia State Univ. and National Bureau of Economic Research
Elisbeth Steyn, ETH Zurich
Ira Tabas, Columbia Univ.
Yoshiko Takahashi, Kyoto Univ.
Sarah Teichmann, Cambridge Univ.
John Thomas, Duke Univ.
Herbert Virgin, Washington Univ.
Bert Vogelstein, Johns Hopkins Univ.
Cynthia Volkert, Univ. of Göttingen
Bruce D. Walker, Harvard Medical School
Douglas Wallace, Dalhousie Univ.
Herbert Weiss, Univ. of Oxford
David A. Wardle, Swedish Univ. of Agric Sciences
David Waxman, Fudan Univ.
Detlef Weigel, Max-Planck Inst., Tübingen
Jonathan Weissman, Univ. of California, San Francisco
Sue West, Univ. of California, Riverside
Kathy Willis, Oxford Univ.
Ian A. Wilson, The Scripps Res. Inst.
Timothy D. Wilson, Univ. of Virginia
Jan Zaenen, Leiden Univ.
Kenneth Zaretzky, Univ. of Penn. School of Medicine
Mayana Zatz, University of Sao Paulo
Jonathan Zehr, Univ. of California, Santa Cruz
Maria Zuber, MIT

BOOK REVIEW BOARD

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