

Editor-in-Chief **Jeremy Berg**

Executive Editor **Monica M. Bradford** News Editor **Tim Appenzeller**
Deputy Editors **Lisa D. Chong, Andrew M. Sugden(UK), Valda J. Vinson, Jake S. Yeston**

Research and Insights

DEPUTY EDITOR, EMERITUS **Barbara R. Jasný SR. EDITORS** **Caroline Ash(UK), Gilbert J. Chin, Julia Fahrenkamp-Uppenbrink(UK), Pamela J. Hines, Stella M. Hurtle(UK), Paula A. Kiberstis, Marc S. Lavigne(Canada), Ian S. Osborne(UK), Beverly A. Purnell, L. Bryan Ray, H. Jesse Smith, Jelena Stajic, Peter Stern(UK), Phillip D. Szuroni, Sacha Vignieri, Brad Wible, Laura M. Zahn ASSOCIATE EDITORS** **Brent Grocholski, Priscilla Kelly, Keith T. Smith ASSOCIATE BOOK REVIEW EDITOR** **Valerie B. Thompson LETTERS EDITOR** **Jennifer Sills**
LEAD CONTENT PRODUCTION EDITORS **Harry Jach, Lauren Kmec CONTENT PRODUCTION EDITORS** **Amelia Beyna, Jeffrey E. Cook, Chris Filiatreau, Cynthia Howe, Barbara P. Ordway, Catherine Wolner SR. EDITORIAL COORDINATORS** **Carolyn Kyle, Beverly Shields EDITORIAL COORDINATORS** **Aneera Dobbins, Joi S. Granger, Jeffrey Hearn, Lisa Johnson, Maryrose Madrid, Anita Wynn PUBLICATIONS ASSISTANTS** **Nida Masilius, Dona Mathieu, Le-Toya Mayne Flood, Shannon McMahon, Scott Miller, Jerry Richardson, Alice Whaley(UK), Gwen Grant(UK), Brian White EXECUTIVE ASSISTANT** **Jessica Slater ADMINISTRATIVE SUPPORT** **Janet Clements(UK), Lizanne Newton(UK), Megan Eldred(UK)**

News

NEWS MANAGING EDITOR **John Travis INTERNATIONAL EDITOR** **Richard Stone DEPUTY NEWS EDITORS** **Elizabeth Culotta, David Grimm, Eric Hand, David Malakoff, Leslie Roberts CONTRIBUTING EDITOR** **Martin Enserink(Europe) SR. CORRESPONDENTS** **Daniel Clery(UK), Jeffrey Mervis, Elizabeth Pennisi NEWS WRITERS** **Adrian Cho, Jon Cohen, Jennifer Couzin-Frankel, Carolyn Gramling, Jocelyn Kaiser, Catherine Maticic, Kelly Servick, Robert F. Service, Erik Stokstad(Cambridge, UK), Paul Voosen, Meredith Wadman INTERNS** **Jessica Boddy, Rachael Lallensack CONTRIBUTING CORRESPONDENTS** **John Bohannon, Warren Cornwall, Ann Gibbons, Mara Hennistandahl, Sam Keen, Eli Kintisch, Kai Kupferschmidt(Berlin), Andrew Lawler, Mitch Leslie, Eliot Marshall, Virginia Morell, Dennis Normile(Shanghai), Tania Rabesandratana(London), Emily Underwood, Gretchen Vogel(Berlin), Lizzie Wade(Mexico City) CAREERS** **Donisha Adams, Rachel Bernstein(Editor), Maggie Kuo COPY EDITORS** **Julia Cole, Dorie Cheylen**

Executive Publisher **Rush D. Holt**

Publisher **Bill Moran** Chief Digital Media Officer **Josh Freeman**

DIRECTOR, BUSINESS STRATEGY AND PORTFOLIO MANAGEMENT **Sarah Whalen DIRECTOR, PRODUCT AND CUSTOM PUBLISHING** **Will Schweitzer**
PRODUCT DEVELOPMENT ASSOCIATE **Hannah Heckner BUSINESS SYSTEMS AND FINANCIAL ANALYSIS DIRECTOR** **Randy Yi SENIOR SYSTEMS ANALYST** **Nicole Mehmedovich DIRECTOR, BUSINESS OPERATIONS & ANALYSIS** **Eric Knott MANAGER, BUSINESS OPERATIONS** **Jessica Tierney**
SENIOR BUSINESS ANALYST **Sheri Lipman BUSINESS ANALYSTS** **David Garrison, Michael Hardesty Meron Kebede, Sandy Kim**
FINANCIAL ANALYST **Drew S. Chord DIRECTOR, COPYRIGHTS LICENSING SPECIAL PROJECTS** **Emilie David PERMISSIONS ASSOCIATE** **Elizabeth Sandler RIGHTS, CONTRACTS, AND LICENSING ASSOCIATE** **Lili Kiser RIGHTS & PERMISSIONS ASSISTANT** **Alexander Lee**

MARKETING DIRECTOR **Elise Swinehart ASSOCIATE MARKETING DIRECTOR** **Stacey Burke Bowers MARKETING MANAGER, PUBLISHING** **Shawana Arnold MARKETING ASSOCIATE** **Steven Goodman CREATIVE DIRECTOR** **Scott Rodgerson SENIOR ART ASSOCIATES** **Paula Fry ART ASSOCIATE** **Kim Huynh**

FULFILLMENT SYSTEMS AND OPERATIONS **membership@aaas.org MANAGER, MEMBER SERVICES** **Pat Butler SPECIALISTS** **Terrance Morrison, Latasha Russell MANAGER, DATA ENTRY** **Mickie Napoleoni DATA ENTRY SPECIALISTS** **Brenden Aquilino, Fiona Giblin**
MARKETING ASSOCIATE **Isa Sesay-Bah**

DIRECTOR, INSTITUTIONAL LICENSING **David Celano PUBLISHER RELATIONS, EASTERN REGION** **Keith Layson PUBLISHER RELATIONS, WESTERN REGION** **Ryan Rexroth ASSOCIATE DIRECTOR, INSTITUTIONAL LICENSING OPERATIONS** **Iquo Edim SENIOR OPERATIONS ANALYST** **Lana Guz MANAGER, AGENT RELATIONS & CUSTOMER SUCCESS** **Judy Libridge**

WEB TECHNOLOGIES PORTFOLIO MANAGER **Trista Smith TECHNICAL MANAGER** **Chris Coleman PROJECT MANAGER** **Nick Fletcher DEVELOPERS** **Elissa Heller, Ryan Jensen, Jimmy Marks, Brandon Morrison**

DIGITAL MEDIA DIRECTOR OF ANALYTICS **Enrique Gonzales DIGITAL REPORTING ANALYST** **Eric Hossinger SR. MULTIMEDIA PRODUCER** **Sarah Crespi**
MANAGING DIGITAL PRODUCER **Alison Crawford PRODUCER** **Liana Birke VIDEO PRODUCER** **Chris Burns, Nguyễn Khởi Nguyễn**
DIGITAL SOCIAL MEDIA PRODUCER **Brice Russ**

DIRECTOR OF OPERATIONS PRINT AND ONLINE **Lizabeth Harman DIGITAL/PRINT STRATEGY MANAGER** **Jason Hillman**
QUALITY TECHNICAL MANAGER **Marcus Spiegler PROJECT ACCOUNT MANAGER** **Tara Kelly DIGITAL PRODUCTION MANAGER** **Lisa Stanford**
ASSISTANT MANAGER DIGITAL/PRINT **Rebecca Doshi SENIOR CONTENT SPECIALISTS** **Steve Forrester, Antoinette Hodal, Lori Murphy, Anthony Rosen CONTENT SPECIALISTS** **Jacob Hedrick, Kimberley Oster ADVERTISING OPERATIONS SPECIALIST** **Ashley Jeter**

DESIGN DIRECTOR **Beth Rakouskas DESIGN EDITOR** **Marcy Atarod SENIOR DESIGNER** **Chrystal Smith DESIGNER** **Christina Aycock**
GRAPHICS MANAGING EDITOR **Alberto Cuadra GRAPHICS EDITOR** **Garvin Grullón SENIOR SCIENTIFIC ILLUSTRATORS** **Chris Bickel, Katharine Sutliff SCIENTIFIC ILLUSTRATORS** **Valerie Altounian, Alice Kitterman INTERACTIVE GRAPHICS EDITOR** **Jia You SENIOR GRAPHICS SPECIALISTS** **Holly Bishop, Nathalie Cary PHOTOGRAPHY MANAGING EDITOR** **William Douthitt PHOTO EDITOR** **Emily Petersen**
IMAGE RIGHTS AND FINANCIAL MANAGER **Jessica Adams**

DIRECTOR, GLOBAL COLLABORATION, CUSTOM PUBLICATIONS, ADVERTISING **Bill Moran EDITOR, CUSTOM PUBLISHING** **Sean Sanders: 202-326-6300**
ASSISTANT EDITOR, CUSTOM PUBLISHING **Jackie Oberst: 202-326-6463 ASSOCIATE DIRECTOR, ADVERTISING MARKETING** **Justin Sawyers: 202-326-7061**
science_advertising@aaas.org **ADVERTISING PRODUCTION OPERATIONS MANAGER** **Deborah Tompkins SR. PRODUCTION SPECIALIST/GRAPHIC DESIGNER** **Amy Hardcastle SR. TRAFFIC ASSOCIATE** **Christine Hall SALES COORDINATOR** **Shirley Young DIRECTOR OF BUSINESS DEVELOPMENT**
AND ACADEMIC PUBLISHING RELATIONS, ASIA **Xiaoying Chu: +86-131 6136 3212, xchu@aaas.org COLLABORATION/CUSTOM PUBLICATIONS/JAPAN**
Adarsh Sandhu + 81532-81-5142 asandhu@aaas.org 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 MIDWEST **Jeffrey Dembski: 847-498-4520 x3005, Steven Loerch: 847-498-4520**
x3006 **UK EUROPE/ASIA** **Roger Goncalves: TEL/FAX +41 43 243 1358 JAPAN** **Katsuyoshi Fukamizu(Tokyo): +81-3-3219-5777 kfukamizu@aaas.org**
DIRECTOR, COLLABORATION AND PUBLISHING SERVICES **CHINA/TAIWAN** **Yan Xiang: +86-186 0082 9345, xyiang@aaas.org**

GLOBAL SALES DIRECTOR **ADVERTISING AND CUSTOM PUBLISHING** **Tracy Holmes: +44 (0) 1223 326525, FAX +44 (0) 1223 326532** **tholmes@science-int.co.uk**
CLASSIFIED advertise@sciencecareers.org **U.S. SALES** **Tina Burks: 202-326-6577, Nancy Toema: 202-326-6578**
EUROPE/ROW SALES **Sarah Lelarge SALES ASSISTANT** **Kelly Grace Japan Hiroyuki Mashiki(Kyoto): +81-75-823-1109 hmashiki@aaas.org CHINA/TAIWAN** **Yan Xiang: +86-186 0082 9345 xyiang@aaas.org**
MARKETING MANAGER **Allison Pritchard MARKETING ASSOCIATE** **Aimee Aponte**

AAAS BOARD OF DIRECTORS, CHAIR **Geraldine L. Richmond PRESIDENT** **Barbara A. Schaal PRESIDENT-ELECT** **Susan Hockfield**
TREASURER **David Evans Shaw CHIEF EXECUTIVE OFFICER** **Rush D. Holt BOARD** **Cynthia M. Beall, May R. Berenbaum, Carlos J. Bustamante, Stephen P.A. Fodor, Claire M. Fraser, Michael S. Gazzaniga, Laura H. Greene, Elizabeth Loftus, Mercedes Pascual**

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 **202-326-6730 REPRINTS:** Author Inquiries **800-635-7181 COMMERCIAL INQUIRIES** **803-359-4578 PERMISSIONS** **202-326-6765, permissions@aaas.org AAAS Member Services** **202-326-6417 or http://membercentral.aaas.org/discouints**

Science serves as a forum for discussion of important issues related to the advancement of science by publishing material on which a consensus has been reached as well as including the presentation of minority of conflicting points of view. 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.

INFORMATION FOR AUTHORS See pages 624 and 625 of the 5 February 2016 issue or access www.sciencemag.org/authors/science-information-authors

BOARD OF REVIEWING EDITORS (Statistics board members indicated with \$)

Adriano Aguzzi, U. Hospital Zürich
Takuzo Aida, U. of Tokyo
Leslie Aiello, Wenner-Gren Foundation
Judith Allen, U. of Edinburgh
Sebastian Amigorena, Institut Curie
Meinrat O. Andreae, Max-Planck Inst. Mainz
Paola Ariotta, Harvard U.
Johan Auwerx, EPFL
David Awschalom, U. of Chicago
Clare Baker, University of Cambridge
Nenad Ban, ETH Zurich
Franz Bauer, Pontificia Universidad Católica de Chile
Ray H. Baughman, U. of Texas, Dallas
David Baum, U. of Wisconsin
Carlo Beenakker, Leiden U.
Kamran Behnia, ESPCI-ParisTech
Yasmine Belkaid, NIAID, NIH
Philip Benfey, Duke U.
May Berenbaum, U. of Illinois
Gabriele Bergers, U. of California, San Francisco
Bradley Bernstein, Massachusetts General Hospital
Peer Bork, EMBL
Chris Bowler, École Normale Supérieure
Ian Boyd, U. of St. Andrews
Emily Brodsky, U. of California, Santa Cruz
Ron Brookmeyer, U. of California Los Angeles (\$)
Christian Büchel, U. Hamburg-Eppendorf
Carter Tribley Butts, U. of California, Irvine
Gyorgy Buzsáki, New York U. School of Medicine
Bianche Capel, Duke U.
Mats Carlsson, U. of Oslo
Ilb Chorkendorff, U. of Denmark
David Clapham, Children's Hospital Boston
Joel Cohen, Rockefeller U., Columbia U.
James J. Collins, MIT
Robert Cook-Deegan, Duke U.
Lisa Coussens, Oregon Health & Science U.
Alan Cowman, Walter & Eliza Hall Inst.
Robert H. Crabtree, Yale U.
Roberta Croce, Vrije Universiteit
Janet Currie, Princeton U.
Jeff L. Dangl, U. of North Carolina
Tom Daniel, U. of Washington
Frans de Waal, Emory U.
Stanislav Dehaene, Collège de France
Robert Desimone, MIT
Claude Despland, New York U.
Sandra Diaz, Universidad Nacional de Córdoba
Dennis Discher, U. of Pennsylvania
Gerald W. Dorn II, Washington U. School of Medicine
Jennifer A. Doudna, U. of California, Berkeley
Bruce Dunn, U. of California, Los Angeles
William Dunphy, Caltech
Christopher Dye, WHO
Todd Ehlers, U. of Washington
Tim Elston, U. of North Carolina at Chapel Hill
Jennifer Eliseff, Johns Hopkins U.
Barry Everitt, U. of Cambridge
Vanessa Ezenwa, U. of Georgia
Ernst Fehr, U. of Zurich
Anne C. Ferguson-Smith, U. of Cambridge
Michael Feuer, The George Washington U.
Toren Finkel, NHLBI, NIH
Kate Fitzgerald, U. of Massachusetts
Peter Fratzl, Max-Planck Inst.
Elaine Fuchs, Rockefeller U.
Daniel Geschwind, UCLA
Karl-Heinz Glassmeier, TU Braunschweig
Ramon Gonzalez, Rice U.
Elizabeth Grove, U. of Chicago
Nicolas Gruber, ETH Zurich
Kip Guy, St. Jude's Children's Research Hospital
Taeji Ha, U. of Illinois at Urbana-Champaign
Wolf-Dietrich Hardt, ETH Zurich
Christian Haass, Ludwig Maximilians U.
Sharon Hammes-Schiffer, U. of Illinois at Urbana-Champaign
Michael Hasselmo, Boston U.
Martin Heimann, Max-Planck Inst., Jena
Yka Helariutta, U. of Cambridge
James A. Hendler, Rensselaer Polytechnic Inst.
Janet G. Hering, Swiss Fed. Inst. of Aquatic Science & Technology
Kai-Uwe Hinrichs, U. of Bremen
David Hodell, U. of Cambridge
Lora Hooper, UT Southwestern Medical Ctr. at Dallas
Tamas Horvath, Yale University
Raymond Huey, U. of Washington
Fred Hughson, Princeton U.
Auke Ijspeert, EPFL Lausanne
Stephen Jackson, USGS and U. of Arizona
Steven Jacobsen, U. of California, Los Angeles
Seema Jayachandran, Northwestern U.
Kai Jonas, EPFL Lausanne
Peter Jonas, Inst. of Science & Technology (IST) Austria
Datt Kaeberlein, U. of Washington
William Kaelin Jr., Dana-Farber Cancer Inst.
Daniel Kammen, U. of California, Berkeley
Abby Kavner, U. of California, Los Angeles
Hiroshi Kawakatsu, U. of Tokyo
Masashi Kawasaki, U. of Tokyo
N. Barry Kim, Seoul National U.
Robert Kingston, Harvard Medical School
Etienne Kochlin, École Normale Supérieure
Alexander Kolodkin, Johns Hopkins U.
Thomas Langer, U. of Cologne
Mitchell A. Lazar, U. of Pennsylvania
David Lazer, Harvard U.
Thomas Lecuit, IBM
Virginia Lee, U. of Pennsylvania
Stanley Lemon, U. of North Carolina at Chapel Hill
Ottoline Leyser, Cambridge U.
Wendell Lim, U.C. San Francisco
Marcia C. Linn, U. of California, Berkeley
Jianguo Liu, Michigan State U.
Christopher Marx, U. of Idaho
Luis Liz-Marzán, CIC biomGUNE
Jonathan Losos, Harvard U.
Ke Lu, Chinese Acad. of Sciences
Christian Lüscher, U. of Geneva
Laura Machesky, CRUK Beatson Inst. for Cancer Research
Anne Magurran, U. of St. Andrews
Oscar Marin, CSIC & U. Miguel Hernández
Charles Marshall, U. of California, Berkeley
C. Robertson McClung, Dartmouth College
Rodrigo Medellín, U. of Mexico
Graham Medley, U. of Warwick
Jane Memmott, U. of Bristol
Toni Misteli, NCI
Yasushi Miyashita, U. of Tokyo
Masumi Miura, U. of Georgia
Richard Morris, U. of Edinburgh
Alison Motsinger-Reif, NC State U. (\$)
Thomas Murray, The Hastings Center
Daniel Neumark, U. of California, Berkeley
Kitty Nijmeijer, U. of Twente
Helga Nowotny, European Research Advisory Board
Rachel O'Reilly, Warwick U.
Joe Orenstein, U. of California
Berkeley & Lawrence Berkeley National Lab
Harry Orr, U. of Minnesota
Pilar Ossorio, U. of Wisconsin
Andrew Oswald, U. of Warwick
Isabella Pagano, Istituto Nazionale di Astrofisica
Margaret Palmer, U. of Maryland
Steve Palumbi, Stanford U.
Jane Parker, Max-Planck Inst. of Plant Breeding Research
Giovanni Parmigiani, Dana-Farber Cancer Inst. (\$)
John H. J. Petri, Memorial Sloan-Kettering Cancer Center
Samuel Pfaff, Salk Institute for Biological Studies
Kathrin Plath, U. of California, Los Angeles
Martin Plenio, Uln University
Albert Polman, FOM Institute AMOLF
Philippe Pouchard, CNRS
Jonathan Pritchard, Stanford U.
Wim van der Putten, Netherlands Institute of Ecology
David Randall, Colorado State U.
Sarah Reisman, Caltech
Felix Rey, Institut Pasteur
Trevor Robbins, U. of Cambridge
Jim Roberts, Fred Hutchinson Cancer Research Ctr.
Amy Rosenzweig, Northwestern University
Roberta Rudnick, U. of California, Santa Barbara
Mike Ryan, U. of Texas, Austin
Mitsunori Saitou, Kyoto U.
Shimon Kaguchki, Kyoto U.
Miquel Salmeron, Lawrence Berkeley National Lab
Jürgen Sandkühn, Medical U. of Vienna
Alexander Schier, Harvard U.
Vladimir Shalaev, Purdue U.
Jay Shendure, U. of Washington
Robert Siliciano, Johns Hopkins School of Medicine
Uri Simonsohn, U. of Pennsylvania
Alison Smith, John Innes Centre
Richard Smith, U. of North Carolina (\$)
John Speakman, U. of Aberdeen
Allan C. Spradling, Carnegie Institution of Washington
Jonathan Sprent, Garvan Inst. of Medical Research
Eric Steig, U. of Washington
Paula Stephan, Georgia State U. and National Bureau of Economic Research
V. S. Subrahmanian, U. of Maryland
Ira Tabas, Columbia U.
Sarah Teichmann, Cambridge U.
John Thomas, North Carolina State U.
Shubha Tole, Tata Institute of Fundamental Research
Christopher Tyler-Smith, The Wellcome Trust Sanger Inst.
Herbert Virsik, Washington U.
Bert Vogelstein, Johns Hopkins U.
David Wallace, Weizmann Inst. of Science
Jane-Ling Wang, U. of California, Davis (\$)
David Waxman, Fudan U.
Jonathan Weissman, U. of California, San Francisco
Chris Wikle, U. of Missouri (\$)
Ian A. Wilson, The Scripps Res. Inst. (\$)
Timothy D. Wilson, U. of Virginia
Jan Zaenen, Leiden U.
Kenneth Zaret, U. of Pennsylvania School of Medicine
Jonathan Zehr, U. of California, Santa Cruz
Len Zon, Children's Hospital Boston
Maria Zuber, MIT

BOOK REVIEW BOARD

David Bloom, Harvard U. Samuel Bowring, MIT, Angela Creager, Princeton U., Richard Sweder, U. of Chicago, Ed Wasserman, DuPont