

EDITORIAL

- 402 Bricks and MOOCs
Marcia McNutt

NEWS OF THE WEEK

- 406 A roundup of the week's top stories

NEWS & ANALYSIS

- 409 Ancient DNA Links Native Americans With Europe
>> Science Podcast
- 410 U.S. Shutdown Ends, but Not Budget Anxiety
- 411 Earliest Known Galaxy Formed Stars at a Breakneck Pace
- 412 U.K. Science Adviser Faces Emotionally Charged Issues and Uncertain Science
- 413 Immune Suppressant Unexpectedly Boosts Flu Vaccine
- 415 Surprising New Dengue Virus Throws a Spanner in Disease Control Efforts

NEWS FOCUS

- 416 Varmus's Second Act
A Cancer To-Do List

LETTERS

- 420 Ecosystem Services: Accounting Standards
C. Obst et al.
- Ecosystem Services: The Farmers' Challenge
A. Graham et al.
- Ecosystem Services: Nature's Balance Sheet
R. Aspinall and P. Gregory
- Response
I. J. Bateman et al.

BOOKS ET AL.

- 423 Life Atomic
A. N. H. Creager, reviewed by J. Radin
- 424 Invasive Species
D. Simberloff, reviewed by M. Vilà

POLICY FORUM

- 425 Biodiversity Risks from Fossil Fuel Extraction
N. Butt et al.

PERSPECTIVES

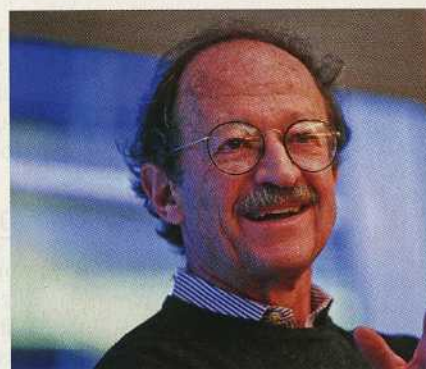
- 427 Women, Fertility, and the Rise of Modern Capitalism
A. Alesina
- 428 Natural Selection and Pain Meet at a Sodium Channel
G. R. Lewin
>> Research Article p. 441
- 429 Expanding the Scope of Fluorine Tags for PET Imaging
L. Zhu et al.
- 431 The New Core Paradox
P. Olson
- 432 Mucus Coat, a Dress Code for Tolerance
Y. Belkaid and J. Grainger
>> Research Article p. 447
- 433 Blooms Bite the Hand That Feeds Them
H. W. Paerl and T. G. Otten

SCIENCE PRIZE ESSAY

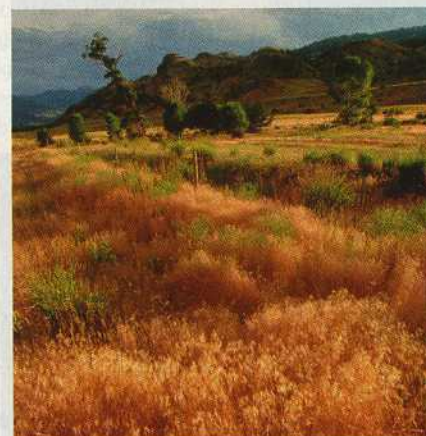
- 436 Radiation and Atomic Literacy for Nonscientists
A. Johnson

CONTENTS continued >>

EDITED BY STELLA HURLEY



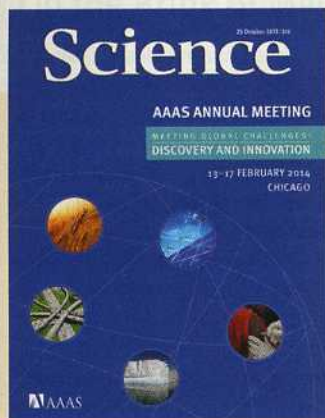
page 416



page 424

ON THE WEB THIS WEEK

- >> Science Podcast**
Listen to stories on shaping liquids with nanoparticles, eating scorpions with ease, the first Americans, and more.
- >> Find More Online**
Check out *Science Express*, our podcast, videos, daily news, our research journals, and *Science Careers* at www.sciencemag.org.



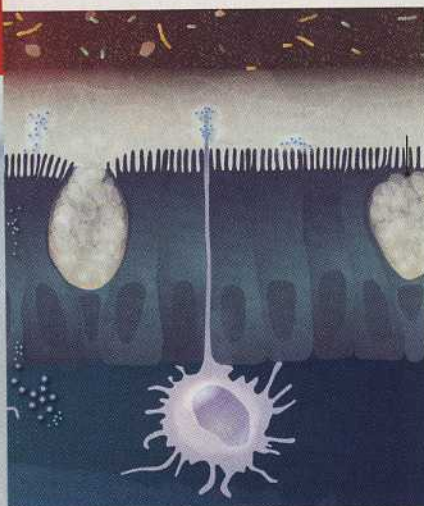
COVER

The 2014 AAAS Annual Meeting will take place 13 to 17 February in Chicago, Illinois. The meeting's theme—*Meeting Global Challenges: Discovery and Innovation*—focuses on finding sustainable solutions through inclusive, international, and interdisciplinary efforts that are most useful to society and enhance economic growth. The preliminary program begins on page 486.

Images (clockwise from top left; all ©iStock.com): pawel.gaul, deliormanli, Sean_Warren, ekvals, JamesReillyWilson

DEPARTMENTS

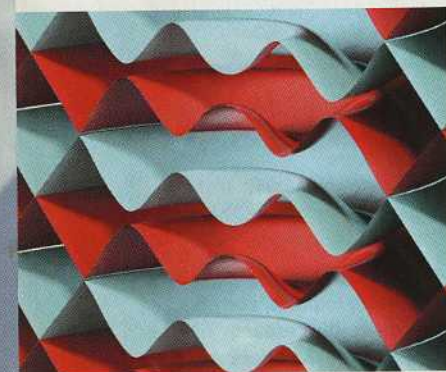
- 401 This Week in *Science*
- 403 Editors' Choice
- 404 *Science* Staff
- 438 AAAS News & Notes
- 485 New Products
- 486 AAAS Meeting Program
- 496 *Science Careers*



pages 432 & 447



pages 428 & 441



page 453

RESEARCH ARTICLES

- 440 **Fine Tuning of Craniofacial Morphology by Distant-Acting Enhancers**
C. Attanasio et al.
Targeted deletion of individual craniofacial enhancers from the mouse genome sculpts facial shapes.
Research Article Summary; for full text: <http://dx.doi.org/10.1126/science.1241006>
>> *Video*
- 441 **Voltage-Gated Sodium Channel in Grasshopper Mice Defends Against Bark Scorpion Toxin**
A. H. Rowe et al.
Grasshopper mice use the scorpion's strength against it—instead of inducing pain, scorpion venom blocks pain.
>> *Perspective p. 428; Science Podcast; Video*
- 447 **Mucus Enhances Gut Homeostasis and Oral Tolerance by Delivering Immunoregulatory Signals**
M. Shan et al.
Mucus not only forms a physical barrier in the intestine but also promotes immunological tolerance of bacteria and foods.
>> *Perspective p. 432*

REPORTS

- 453 **Observation of Floquet-Bloch States on the Surface of a Topological Insulator**
Y. H. Wang et al.
Time- and angle-resolved photoemission spectroscopy is used to observe coherent coupling of light with electronic states.
- 457 **From Few to Many: Observing the Formation of a Fermi Sea One Atom at a Time**
A. N. Wenz et al.
Interactions in a one-dimensional few-atom gas of ⁶Li exhibit a fast convergence to the limit of many particles.
- 460 **Stabilizing Liquid Drops in Nonequilibrium Shapes by the Interfacial Jamming of Nanoparticles**
M. Cui et al.
A self-assembling composite surfactant can be used to make stable droplets with complex shapes.
>> *Science Podcast*

- 463 **Mass-Independent Oxygen Isotopic Partitioning During Gas-Phase SiO₂ Formation**
S. Chakraborty et al.
The earliest solids in the solar system may have formed from a gas-phase reaction of SiO and OH.
- 466 **Strong Premelting Effect in the Elastic Properties of hcp-Fe Under Inner-Core Conditions**
B. Martorell et al.
Elastic weakening of iron just before melting explains variations in the seismic structure of Earth's inner core.
- 468 **Atypical Combinations and Scientific Impact**
B. Uzzi et al.
Highly cited work is simultaneously conventional and unconventional.
- 472 **A Radical Intermediate in Tyrosine Scission to the CO and CN⁻ Ligands of FeFe Hydrogenase**
J. M. Kuchenreuther et al.
Electron paramagnetic resonance spectroscopy elucidates a key step in the biosynthesis of hydrogenase active site ligands.
- 475 **Causes and Effects of N-Terminal Codon Bias in Bacterial Genes**
D. B. Goodman et al.
The structure of the 5' ends of messenger RNAs downstream of the start of protein translation has a major effect on protein expression.
- 479 **2000 Years of Parallel Societies in Stone Age Central Europe**
R. Bollongino et al.
Genetic and isotopic evidence document changes occurring in Europe during the Neolithic era.
- 482 **Changing Social Norm Compliance with Noninvasive Brain Stimulation**
C. C. Ruff et al.
Right lateral prefrontal cortex activity affects sanction-based compliance with behavioral norms in humans.

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals Mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2013 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$149 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$990; Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$85. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Publications Mail Agreement Number 1069624. Printed in the U.S.A.

Change of address: Allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to AAAS, P.O. Box 96178, Washington, DC 20090-6178. Single-copy sales: \$10.00 current issue, \$15.00 back issue prepaid includes surface postage; bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that \$30.00 per article is paid directly to CCC, 222 Rosewood Drive, Danvers, MA 01923. The identification code for Science is 0036-8075. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.