

## EDITORIAL

- 1573 Science for Physicians  
*Molly Cooke*

## NEWS OF THE WEEK

- 1582 A Way to Heal Science Education, But Is There the Political Will?
- 1583 Misconduct by Postdocs Leads to Retraction of Papers
- 1585 Genomics Researchers Upset by Rivals' Publicity
- 1586 Origin of Most Deadly Human Malaria Comes Out of the Mist
- 1587 From *Science's* Online Daily News Site
- 1588 Long-Fought Compromise Reached on European Animal Rules
- 1589 A Tricky Balance Between Activists' and Researchers' Rights
- 1590 New Type of Cosmic Dust Tells of Galaxy's Violent History  
>> Report p. 1622
- 1591 Parlous Times for Seed Banks Spell Trouble for Australian Agriculture
- 1591 From the *Science* Policy Blog

## NEWS FOCUS

- 1592 Home, Home Outside the Range?  
>> *Science Podcast*
- 1595 Mouse Studies Challenge Rare Immune Cell's Powers
- 1596 Behind the Eco-Label, a Debate Over Antarctic Toothfish

## LETTERS

- 1598 Retraction  
*L. B. Buck*
- A Recount of Tropical Tree Species  
*J. Ghazoul*
- Science Standards: Averages Deceive  
*A. DePristo*
- Science Standards: Value the Teachers  
*S. B. Oppenheimer*
- Response  
*A. I. Leshner et al.*

Education Framework Needs Better Foundation  
*F. J. Rutherford*

## 1599 CORRECTIONS AND CLARIFICATIONS

## BOOKS ET AL.

- 1600 The Evolution of Language  
*W. T. Fitch*;  
The Evolution of Human Language  
*R. K. Larson et al., Eds., reviewed by N. J. Enfield*
- 1601 Worst Case Bioethics  
*G. J. Annas, reviewed by T. May*

## POLICY FORUM

- 1603 Family Planning and the Millennium Development Goals  
*W. Cates Jr. et al.*

## PERSPECTIVES

- 1604 More Supernova Surprises  
*J. M. Laming*  
>> Report p. 1624
- 1605 The Rise of Sunflowers  
*T. Stuessy*  
>> *Brevia* p. 1621
- 1606 A Bit of Texas in Florida  
*C. Packer*  
>> Report p. 1641
- 1607 Exposing a DUX Tale  
*M. S. Mahadevan*  
>> Report p. 1650
- 1609 STM Ready for the Time Domain  
*M. Morgenstern*  
>> Report p. 1628
- 1610 Branching Takes Nerve  
*J. R. Rock and B. L. M. Hogan*  
>> Report p. 1645
- 1611 Dendrites Do It in Sequences  
*A. Destexhe*  
>> Report p. 1671

## SCIENCE PRIZE ESSAY

- 1613 Immunology for Clinicians: A "Trojan Horse" Approach  
*C. M. Gray et al.*

CONTENTS continued >>



page 1592



pages 1605 & 1621



## COVER

Overlay of a scanning tunneling microscope image of four iron-copper dimers adsorbed on a surface (green) with a snapshot of their electron-spin dynamics (yellow spikes). On page 1628, Loth *et al.* describe the measurement of electron spin relaxation times of individual atoms extracted from a time series of tunneling current measurements with nanosecond time resolution.

Image: Sebastian Loth, IBM Research/Almaden

## DEPARTMENTS

- 1569 This Week in *Science*
- 1575 Editors' Choice
- 1578 *Science* Staff
- 1581 Random Samples
- 1615 AAAS News & Notes
- 1676 New Products
- 1677 *Science* Careers

## REVIEW

- 1616 **Reaction-Diffusion Model as a Framework for Understanding Biological Pattern Formation**  
S. Kondo and T. Miura

## BREVIA

- 1621 **Eocene Patagonia Fossils of the Daisy Family**  
V. D. Barreda et al.  
Fossil evidence suggests that daisies and sunflowers may have originated in South America more than 47 million years ago.  
>> *Perspective p. 1605*

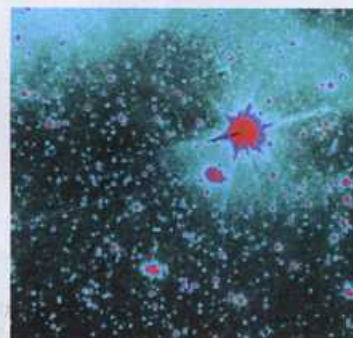
## REPORTS

- 1622 **The Ubiquity of Micrometer-Sized Dust Grains in the Dense Interstellar Medium**  
L. Pagani et al.  
The light scattered by small dust grains can tell us about the properties of star-forming regions in our Galaxy.  
>> *News story p. 1590*
- 1624 **Observing Supernova 1987A with the Refurbished Hubble Space Telescope**  
K. France et al.  
Images of the remnants of a stellar explosion reveal details of fast astrophysical shock waves.  
>> *Perspective p. 1604*
- 1628 **Measurement of Fast Electron Spin Relaxation Times with Atomic Resolution**  
S. Loth et al.  
Scanning tunneling microscopy is used to monitor the fast relaxation dynamics of an atomic spin adsorbed on a surface.  
>> *Perspective p. 1609*
- 1630 **Optical Clocks and Relativity**  
C. W. Chou et al.  
The tiny relativistic effects of everyday life can be measured by clocks ticking at optical frequencies.  
>> *Science Podcast*
- 1633 **Alkali-Stabilized Pt-OH<sub>x</sub> Species Catalyze Low-Temperature Water-Gas Shift Reactions**  
Y. Zhai et al.  
The formation of hydrogen from carbon monoxide and water is catalyzed by the formation of oxidized platinum atoms.
- 1637 **Graphene Double-Layer Capacitor with ac Line-Filtering Performance**  
J. R. Miller et al.  
The performance of electrolytic capacitors in filtering circuitry was improved with high-surface-area graphene electrodes.

- 1639 **Slip Systems in MgSiO<sub>3</sub> Post-Perovskite: Implications for D<sup>+</sup> Anisotropy**  
L. Miyagi et al.  
The major mineral phase in the lower mantle deforms preferentially along one lattice plane.
- 1641 **Genetic Restoration of the Florida Panther**  
W. E. Johnson et al.  
Recovery of the Florida panther population is attributed to the benefits of admixture with panthers from Texas.  
>> *Perspective p. 1606*
- 1645 **Parasympathetic Innervation Maintains Epithelial Progenitor Cells During Salivary Organogenesis**  
S. M. Knox et al.  
Peripheral nerves maintain the undifferentiated state of epithelial progenitor cells during development.  
>> *Perspective p. 1610*
- 1647 **Olfactory Plasticity Is Regulated by Pheromonal Signaling in *Caenorhabditis elegans***  
K. Yamada et al.  
A nematode odor response is regulated by population density through dauer pheromone, a neuropeptide, and neprilysin peptidase.
- 1650 **A Unifying Genetic Model for Facioscapulohumeral Muscular Dystrophy**  
R. J. L. F. Lemmers et al.  
Sequence variants shared by patients with a genetically complex form of muscular dystrophy explain how the disease arises.  
>> *Perspective p. 1607*
- 1653 **The Genetic and Molecular Basis for Sunscreen Biosynthesis in Cyanobacteria**  
E. P. Balskus and C. T. Walsh  
A gene cluster encodes a four-enzyme pathway that uses an unusual mechanism to synthesize small-molecule sunscreens.
- 1656 **A General Mechanism for Network-Dosage Compensation in Gene Circuits**  
M. Acar et al.  
A simple gene circuit consisting of an activator and an inhibitor is insensitive to the number of copies of a gene network.
- 1660 **A *Vibrio* Effector Protein Is an Inositol Phosphatase and Disrupts Host Cell Membrane Integrity**  
C. A. Broberg et al.  
Altering the homeostasis of membrane-bound signaling molecules allows a bacterial pathogen to corrupt cell function.
- 1663  **$\alpha$ -Synuclein Promotes SNARE-Complex Assembly in Vivo and in Vitro**  
J. Burré et al.  
A protein implicated in neurodegeneration promotes the assembly of membrane fusion complexes.



pages 1606 &amp; 1641



pages 1590 &amp; 1622

- 1667 **Stability of the Regulatory T Cell Lineage in Vivo**  
Y. P. Rubtsov et al.  
A subset of T cells that suppress immune-mediated inflammation is maintained by self-renewal.
- 1671 **Dendritic Discrimination of Temporal Input Sequences in Cortical Neurons**  
T. Branco et al.  
Dendrites of neurons are sensitive to the sequence of synaptic activation and can implement cortical computation.  
>> *Perspective p. 1611*

CONTENTS continued &gt;&gt;