

EDITORIAL

- 519 Empowering Science Teachers
Sheila Tobias and Anne Baffert
>> *Science Podcast*

NEWS OF THE WEEK

- 524 A roundup of the week's top stories

NEWS & ANALYSIS

- 528 Budget Cap Could Gut Next Big Fermilab Project
- 529 One H5N1 Paper Finally Goes to Press; Second Greenlighted
>> See all H5N1 coverage online at <http://scim.ag/h5n1>
- 530 New Light on Revolutions That Weren't
- 533 First Spinoff of African Math Institute Takes Root in Senegal

NEWS FOCUS

- 534 Search for Pore-fection Going Solid-State
>> *Science Podcast*
- 538 American Association of Physical Anthropologists Meeting
For Early Hominins, Many Ways To Take a Walk
How the Modern Body Shaped Up
Older Dads Have Healthier Kids Than You Think

LETTERS

- 540 Food Price Complexities Require Nuance
G. Kripke
Response
J. Swinnen and P. Squicciarini
A Step Backward for Italy's Meritocracy
I. R. Marino
- 541 CORRECTIONS AND CLARIFICATIONS
- 541 TECHNICAL COMMENT ABSTRACTS

BOOKS ET AL.

- 542 The Bioregional Imagination
T. Lynch et al., Eds., reviewed by C. Cokinos
- 543 The Republic of Nature
M. Fiege, reviewed by J. R. McNeill

POLICY FORUM

- 544 Rethinking Research Ethics: The Case of Postmarketing Trials
A. J. London et al.

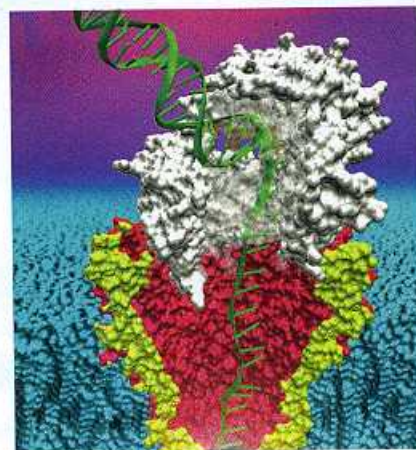
PERSPECTIVES

- 546 Superresolution Subspace Signaling
W. J. Lederer et al.
>> Report p. 597
- 547 The Impact of Ionic Frustration on Electronic Order
L. Balents
>> Report p. 559
- 548 A Dynamic Twist in the Tail
J. A. Slavin
>> Report p. 567
- 550 Regional Sea-Level Projection
J. K. Willis and J. A. Church
- 551 Modeling Ice-Sheet Flow
R. B. Alley and I. Joughin
- 552 Impacts of Biodiversity Loss
B. Cardinale
>> Report p. 589

BREVIA

- 554 Melanesian Blond Hair Is Caused by an Amino Acid Change in TYRP1
E. E. Kenny et al.
Naturally blond hair in Solomon Islanders maps to a missense mutation in a gene associated with pigmentation.

CONTENTS continued >>



page 534



page 543



COVER

A jumble of icebergs forms in front of the heavily crevassed calving front of Jakobshavn Isbræ, one of the fastest outlet glaciers draining the Greenland Ice Sheet. The ~5-kilometer-wide ice front rises ~80 meters out of the water and extends more than 600 meters underwater. Recent research shows that the speeds of Greenland glaciers are increasing. See page 576.

Photo: Ian Joughin

DEPARTMENTS

- 517 This Week in *Science*
- 520 Editors' Choice
- 522 *Science* Staff
- 615 New Products
- 616 *Science* Careers

RESEARCH ARTICLE

- 555 **Spin-Torque Switching with the Giant Spin Hall Effect of Tantalum**
L. Liu et al.
Tantalum is found to generate strong spin currents that can induce switching of ferromagnets efficiently and reliably.

REPORTS

- 559 **Spin-Orbital Short-Range Order on a Honeycomb-Based Lattice**
S. Nakatsuji et al.
Magnetic measurements indicate that a material remains disordered to millikelvin temperatures, thanks to its unusual lattice structure.
>> *Perspective p. 547*
- 563 **Anisotropic Energy Gaps of Iron-Based Superconductivity from Intra-band Quasiparticle Interference in LiFeAs**
M. P. Allan et al.
The energy needed to break up electron pairs in a pnictide superconductor depends on position on the Fermi surface.
- 567 **Magnetic Reconnection in the Near Venusian Magnetotail**
T. L. Zhang et al.
Venus Express observations show that magnetic reconnection occurs in the magnetotail of an unmagnetized planet.
>> *Perspective p. 548*
- 570 **Ancient Impact and Aqueous Processes at Endeavour Crater, Mars**
S. W. Squyres et al.
Analysis of data from the Mars Exploration Rover Opportunity provides evidence for past water flow near an ancient crater.
>> *Science Podcast*
- 576 **21st-Century Evolution of Greenland Outlet Glacier Velocities**
T. Moon et al.
A decade-long compilation of velocity data for Greenland's outlet glaciers shows complex spatial and temporal variability.
- 579 **Imaginal Discs Secrete Insulin-Like Peptide 8 to Mediate Plasticity of Growth and Maturation**
A. Garelli et al.
An insulin/relaxin-like peptide coordinates final organ size in response to fly injury and tumors.
- 582 **Secreted Peptide Dilp8 Coordinates *Drosophila* Tissue Growth with Developmental Timing**
J. Colombani et al.
In fruit flies, growing tissues send signals to the endocrine system to coordinate growth and metamorphosis.

- 585 **Function, Developmental Genetics, and Fitness Consequences of a Sexually Antagonistic Trait**
A. Khila et al.
Sex-specific modifications of male water strider antennae that are important for mating require *distal-less* gene expression.

- 589 **Impacts of Biodiversity Loss Escalate Through Time as Redundancy Fades**
P. B. Reich et al.
Long-term grassland experiments show that high-diversity species combinations become more functionally diverse with time.
>> *Perspective p. 552*

- 593 **Removal of Shelterin Reveals the Telomere End-Protection Problem**
A. Sfeir and T. de Lange
"Naked" chromosome ends are mistakenly targeted by six different DNA repair-related systems in the cell.

- 597 **Elementary Ca^{2+} Signals Through Endothelial TRPV4 Channels Regulate Vascular Function**
S. K. Sonkusare et al.
Imaging reveals single-channel openings of cation channels at the heart of endothelial cell-mediated blood pressure control.
>> *Perspective p. 546*

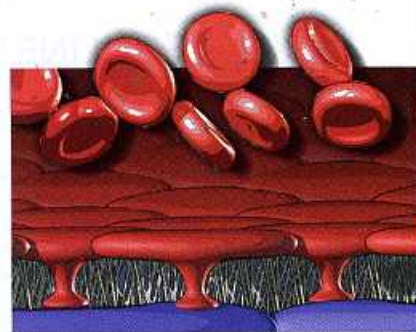
- 601 **Multidimensional Optimality of Microbial Metabolism**
R. Schuetz et al.
A key design principle of bacterial metabolic networks is optimal performance, but not at the expense of adaptability.

- 604 **Radio-Wave Heating of Iron Oxide Nanoparticles Can Regulate Plasma Glucose in Mice**
S. A. Stanley et al.
Gene expression in mice can be activated remotely and noninvasively by radio-wave heating of nanoparticles.
>> *Science Podcast*

- 608 **Substrate-Controlled Succession of Marine Bacterioplankton Populations Induced by a Phytoplankton Bloom**
H. Teeling et al.
Seasonal diatom growth in the North Sea results in a temporal succession of metabolically specialized bacteria.

- 612 **Don't Look Back in Anger! Responsiveness to Missed Chances in Successful and Nonsuccessful Aging**
S. Brassen et al.
Emotionally healthy older adults show a reduced responsiveness to regret when performing a sequential decision task.

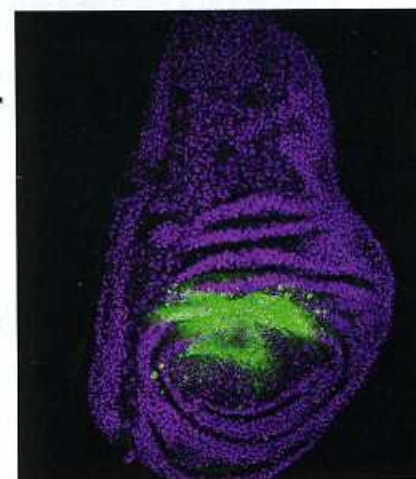
CONTENTS continued >>



pages 546 & 597



page 570



pages 579 & 582