



## NEWS

### IN BRIEF

**480** Roundup of the week's news

### IN DEPTH

#### **484 NEPAL DISASTER PRESAGES A COMING MEGAQUAKE**

Rupture in quiet region of crust suggests Himalayan threat was underestimated *By E. Hand and P. Pulla*

#### **485 IN GUINEA, A LONG, DIFFICULT ROAD TO ZERO EBOLA CASES**

The country could soon be the epidemic's last holdout *By M. Enserink*

#### **486 EMBRYO ENGINEERING STUDY SPLITS SCIENTIFIC COMMUNITY**

First test of gene-editing technique on human embryos illustrates clinical risks *By J. Kaiser and D. Normile*

#### **488 HAVE A SWEET TOOTH? NEW BLOOD TEST COULD TELL**

Isotope ratios could aid research by tracking added sugars *By V. Callier*

#### **489 GREECE RAIDS RESEARCH FUNDS TO PAY SALARIES**

Beleaguered scientists are spending reserves to protect them from confiscation *By E. Cartridge*

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#### **490 BEYOND GRAPHENE**

The ultrathin form of carbon has inspired other atoms-thick materials that promise even bigger technological payoffs *By R. F. Service*

#### **493 WHAT IS JEOPARDY!?**

This popular TV game show has a thing for science *By J. Cohen*

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### PERSPECTIVES

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Dam removals are reconnecting rivers in the United States *By J. E. O'Connor et al.*

#### **498 THE QUANTUM HALO STATE OF THE HELIUM TRIMER**

Femtosecond laser pulses help to take a snapshot of the huge elusive Efimov state *By O. Kornilov*

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#### **499 BRAIN DISORDERS? PRECISELY**

Precision medicine comes to psychiatry *By T. R. Insel and B. N. Cuthbert*

#### **501 EXTINCTION RISKS FROM CLIMATE CHANGE**

How will climate change affect global biodiversity? *By J. Hille Ris Lambers*

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#### **502 HUMAN-WILDLIFE CONFLICTS IN A CROWDED AIRSPACE**

How can the ecological consequences of the increasing use of airspace by humans be minimized? *By S. A. Lambertucci et al.*

#### **504 SECURE SUSTAINABLE SEAFOOD FROM DEVELOPING COUNTRIES**

Require improvements as conditions for market access *By G. S. Sampson et al.*

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#### **506 EARLY LIFE AIRE**

The development of particular T cells at a specific time prevents autoimmunity *By A. Tanaka and S. Sakaguchi*

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### BOOKS ET AL.

#### **508 FORAGERS, FARMERS, AND FOSSIL FUELS**

*By I. Morris, reviewed by P. Turchin*

#### **509 FROM SIGHT TO LIGHT**

*By A. M. Smith, reviewed by C. Dainty*

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#### **509 WILD IDEAS**

*By E. Kelsey*

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#### **511 AMERICA'S CRISIS OF FAITH IN SCIENCE**

*By T. L. Pittinsky*

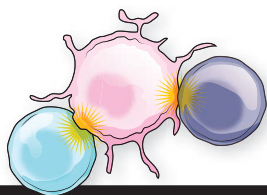
#### **511 OUTSIDE THE TOWER: BRINGING SCIENCE INSIDE PRISON WALLS**

*By C. J. LeRoy*

#### **512 BEWARE STUDY DESIGN MEASUREMENT ERRORS**

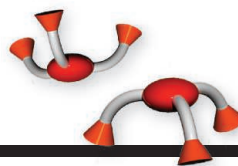
*By D. B. Khattry*





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Suppressing autoimmunity



555

A tool to probe salt bridges

# RESEARCH

## IN BRIEF

**536** From *Science* and other journals

## RESEARCH ARTICLE

### 539 DNA REPAIR

Proteomics reveals dynamic assembly of repair complexes during bypass of DNA cross-links *M. Räschle et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.1253671](http://dx.doi.org/10.1126/science.1253671)

## REPORTS

### 540 QUANTUM SIMULATION

Two-dimensional superexchange-mediated magnetization dynamics in an optical lattice *R. C. Brown et al.*

### 544 QUANTUM GASES

Observation of isolated monopoles in a quantum field *M. W. Ray et al.*

### 547 FERROELECTRICS

Observation of a periodic array of flux-closure quadrants in strained ferroelectric PbTiO<sub>3</sub> films *Y. L. Tang et al.*

### 551 THREE-BODY PHYSICS

Observation of the Efimov state of the helium trimer *M. Kumitski et al.*

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### 555 IONIC INTERACTIONS

Subnanoscale hydrophobic modulation of salt bridges in aqueous media *S. Chen et al.*

### 560 BRAIN COMPUTATION

Selective information routing by ventral hippocampal CA1 projection neurons *S. Ciochi et al.*

### 563 BIOMECHANICS

Mechanistic origins of bombardier beetle (Brachinini) explosion-induced defensive spray pulsation *E. M. Arndt et al.*

### 567 EXTINCTIONS

Paleontological baselines for evaluating extinction risk in the modern oceans *S. Finnegan et al.*

### 571 CLIMATE CHANGE

Accelerating extinction risk from climate change *M. C. Urban*

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### 574 BACTERIAL DIVISION

Mechanical crack propagation drives millisecond daughter cell separation in *Staphylococcus aureus* *X. Zhou et al.*

### 578 PROTEIN DYNAMICS

Direct observation of hierarchical protein dynamics

*J. R. Lewandowski et al.*

### 581 STRUCTURAL BIOLOGY

Structures of the CRISPR-Cmr complex reveal mode of RNA target positioning

*D. W. Taylor et al.*

### 585 RETROTRANSPOSONS

An RNA polymerase III subunit determines sites of retrotransposon integration *A. Bridier-Nahmias et al.*

### 589 IMMUNE TOLERANCE

Regulatory T cells generated early in life play a distinct role in maintaining self-tolerance

*S. Yang et al.*

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Transparency versus harassment  
*By Michael Halpern and Michael Mann*

### 602 WORKING LIFE

From war to science paradise  
*By Rachel Bernstein*

## SPECIAL SECTION

# Light and Optics

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**516** Nanophotonics: Shrinking light-based technology

*A. F. Koenderink et al.*

**521** Transforming the optical landscape *J. B. Pendry et al.*

**525** Quantum optics: Science and technology in a new light

*I. A. Walmsley*

**530** Beyond crystallography: Diffractive imaging using coherent x-ray light sources *J. Miao et al.*

## SEE ALSO

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## ON THE COVER



Sculpting coherent x-ray light with visible lasers. When an atom is hit by a strong rosette-shaped laser field (purple) (a superposition

of red and blue circularly polarized lasers with opposite helicity), an electron (green) is ripped from, and recollides with, the parent ion. The result is the emission of bright, circularly polarized light at extreme ultraviolet wavelengths (blue). For more on cutting-edge advances in light and optics, see page 514. *Image: The Kapteyn/Murnane Group and Steve Burrows, JILA; and the Cohen Group, Technion*

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