

## EDITORIAL

- 137 Cancer Therapy Reform  
*Arthur D. Levinson*

## NEWS OF THE WEEK

- 150 NSF Board Draws Flak for Dropping Evolution From *Indicators*
- 151 Scientists Ask Minister to Disavow Predecessor's Book
- 153 Cancer Gene Patents Ruled Invalid
- 154 Candidate Human Ancestor From South Africa Sparks Praise and Debate  
>> *Research Articles pp. 195 and 205*
- 155 From *Science's* Online Daily News Site
- 157 Fresh Signs of Volcanic Stirrings Are Radiating From Venus
- 157 Scientists Count the Costs of Chile's Quake
- 158 Asking the Right Question Requires Right Mix of Science and Politics
- 159 From the *Science* Policy Blog

## NEWS FOCUS

- 160 EVOLUTION OF BEHAVIOR  
Did Working Memory Spark Creative Culture?  
Does 'Working Memory' Still Work?  
>> *Science Podcast*
- 164 Did Modern Humans Get Smart or Just Get Together?
- 165 Conquering by Copying  
A Winning Combination  
>> *Research Article p. 208*

## LETTERS

- 169 Food Security: Population Controls  
*A. H. Westing*  
Food Security: Green Revolution Drawbacks  
*V. Rull*

- Food Security: Beyond Technology  
*D. W. Bromley*  
Food Security: Crop Species Diversity  
*H. Dempewolf et al.*  
Food Security: GM Crops Threaten Biodiversity  
*R. Tirado and P. Johnston*  
Food Security: Rigorous Regulation Required  
*M. Mellon*  
Food Security: Focus on Agriculture  
*J. R. Porter et al.*  
Food Security: Fossil Fuels  
*R. E. White and R. Grossman*  
Food Security: Perception Failures  
*A. Subramanian et al.*

## 170 CORRECTIONS AND CLARIFICATIONS

## BOOKS ET AL.

- 175 The Art of Not Being Governed  
*J. C. Scott, reviewed by F. Barth*

## POLICY FORUM

- 177 The Barometer of Life  
*S. N. Stuart et al.*

## PERSPECTIVES

- 179 The Microbes Made Me Eat It  
*D. A. Sandoval and R. J. Seeley*  
>> *Report p. 228*
- 180 Holding On by a Hard-Shell Thread  
*P. B. Messersmith*  
>> *Report p. 216*
- 181 Central Chile Finally Breaks  
*R. Madariaga et al.*
- 183 Probing the Nanoscale  
*R. F. Cook*
- 184 Poisonous Contacts  
*S. C. Kogan*  
>> *Report p. 240*
- 185 Graphene Spreads the Heat  
*R. Prasher*  
>> *Report p. 213*

CONTENTS continued >>



page 160



page 175

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## COVER

Cranium of *Australopithecus sediba* (specimen UW88-50), a new species of australopithec found at the Malapa site in South Africa. Two partial skeletons, dated to about 1.9 million years ago, share many derived features with *Homo* and may thus shed light on the evolution of that genus. See the related Research Articles on pages 195 and 205 and the related News story on page 154.

Photo: Brett Eloff, courtesy of Lee Berger and the University of the Witwatersrand

## DEPARTMENTS

- 133 This Week in *Science*  
139 Editors' Choice  
144 *Science* Staff  
149 Random Samples  
252 New Products  
253 *Science* Careers

## REVIEW

- 187 Four-Dimensional Electron Microscopy  
A. H. Zewail

## RESEARCH ARTICLES

- 195 *Australopithecus sediba*: A New Species of Homo-Like Australopithec from South Africa  
L. R. Berger et al.  
>> *Science Podcast*
- 205 Geological Setting and Age of *Australopithecus sediba* from Southern Africa  
P. H. G. M. Dirks et al.  
A new species of *Australopithecus*, about 1.9 million years old, shows many derived features with *Homo*, helping to reveal its evolution.  
>> *News story p. 154*
- 208 Why Copy Others? Insights from the Social Learning Strategies Tournament  
L. Rendell et al.  
Learning from what others do is more efficient than learning all on one's own.  
>> *News story p. 165; Science Podcast*

## REPORTS

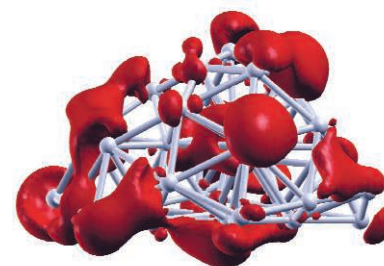
- 213 Two-Dimensional Phonon Transport in Supported Graphene  
J. H. Seol et al.  
The thermal conductivity of graphene supported on silicon dioxide remains high, despite phonon scattering by the substrate.  
>> *Perspective p. 185*
- 216 Iron-Clad Fibers: A Metal-Based Biological Strategy for Hard Flexible Coatings  
M. J. Harrington et al.  
Marine mussel byssal threads have an outer coating in which proteins are linked to metal ions.  
>> *Perspective p. 180*
- 220 Solvent-Mediated Electron Hopping: Long-Range Charge Transfer in  $\text{IBr}^-(\text{CO}_2)$  Photodissociation  
L. Sheps et al.  
The presence of an intervening carbon dioxide molecule dramatically changes the electron transfer probability between two halogen atoms.

- 224 Increased Silver Activity for Direct Propylene Epoxidation via Subnanometer Size Effects  
Y. Lei et al.  
Clusters of three silver atoms deposited on alumina are active for the low-temperature direct formation of propylene oxide.
- 228 Metabolic Syndrome and Altered Gut Microbiota in Mice Lacking Toll-Like Receptor 5  
M. Vijay-Kumar et al.  
The innate immune system may promote metabolic health through effects on gut microbes.  
>> *Perspective p. 179*
- 232 Variation in Transcription Factor Binding Among Humans  
M. Kasowski et al.  
Transcription factor binding sites vary among individuals and are correlated with differences in expression.
- 235 Heritable Individual-Specific and Allele-Specific Chromatin Signatures in Humans  
R. McDaniell et al.  
An appreciable amount of variation in chromatin status and transcription factor binding has a genetic basis.
- 240 Arsenic Trioxide Controls the Fate of the PML-RAR $\alpha$  Oncoprotein by Directly Binding PML  
X.-W. Zhang et al.  
Arsenic, a drug used clinically for leukemia, binds directly to an oncogenic protein, thereby promoting its degradation.  
>> *Perspective p. 184*
- 243 Transnuclear Mice with Predefined T Cell Receptor Specificities Against *Toxoplasma gondii* Obtained via SCNT  
O. Kirak et al.  
Researchers describe a method to obtain transgenic mice for the study of T cell responses to infectious disease.

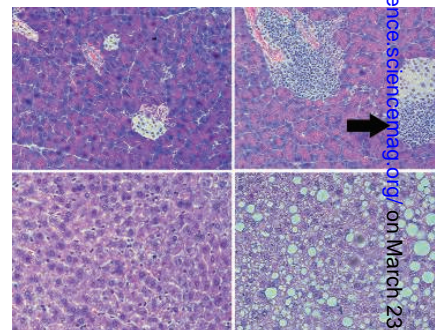
CONTENTS continued >>



pages 180 & 216



page 224



pages 179 & 228

## SCIENCEONLINE

## SCIENCEXPRESS

[www.sciencexpress.org](http://www.sciencexpress.org)

**Recent Hot-Spot Volcanism on Venus from VIRTIS Emissivity Data**

*S. E. Smrekar et al.*

Satellite observations suggest that Venus is a geologically active planet.

10.1126/science.1186785

**Coadministration of a Tumor-Penetrating Peptide Enhances the Efficacy of Cancer Drugs**

*K. N. Sugahara et al.*

Anticancer drugs are more effective in mice when they are injected with a peptide that helps the drugs penetrate the tumor.

10.1126/science.1183057

**Five-Vertebrate ChIP-seq Reveals the Evolutionary Dynamics of Transcription Factor Binding**

*D. Schmidt et al.*

Binding of two liver-specific transcription factors in several vertebrate species reveals complex regulatory evolution.

10.1126/science.1186176

**Reconstitution of Outer Membrane Protein Assembly from Purified Components**

*C. L. Hagan et al.*

Assembly of a  $\beta$ -barrel membrane protein in a cell-free system does not require added energy.

10.1126/science.1188919

## SCIENCENOW

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Highlights From Our Daily News Coverage

**Mass of the Common Quark Finally Nailed Down**

Physicists measure fundamental bits of nuclear matter to within 1.5%.

**Notorious Drug Stanches Bleeding**

Thalidomide eases symptoms of rare blood vessel disease.

**East Coast Winds Would Support a Stable Power Grid**

Regionally interconnected turbines could supply power for much of the country.

## SCIENCESIGNALING

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**RESEARCH ARTICLE: Stabilization of VEGFR2 Signaling by Cerebral Cavernous Malformation 3 Is Critical for Vascular Development**

*Y. He et al.*

CCM3, which is associated with inherited cerebrovascular defects, prevents ligand-mediated degradation of a receptor involved in blood vessel formation.

**RESEARCH ARTICLE: AAA+ Proteins RUVBL1 and RUVBL2 Coordinate PIKK Activity and Function in Nonsense-Mediated mRNA Decay**

*N. Izumi et al.*

Two ATPases regulate molecular complexes that ensure genome integrity and accurate gene expression.

**RESEARCH ARTICLE: Regulation of G Protein-Coupled Receptor Signaling—Specific Dominant-Negative Effects of Melanocortin 2 Receptor Accessory Protein 2**

*J. A. Sebag and P. M. Hinkle*

Two homologous accessory proteins exert opposing effects on the responsiveness of the melanocortin 2 receptor to the hormone ACTH.

**PERSPECTIVE: A Trojan Horse for Parkinson's Disease**

*Y. Hu and Y. Tong*

Inhibition of the kinase activity of LRRK2 may be neuroprotective.

## SCIENCECAREERS

[www.sciencereers.org/career\\_magazine](http://www.sciencereers.org/career_magazine)

Free Career Resources for Scientists

**Scientists Embrace Openness**

*C. Wald*

Some scientists go to great lengths to make everything they do in the lab transparent.

**All in the Details: Careers in Regulatory Science**

*N. Volkers*

Regulations at every step of drug development mean jobs for regulatory scientists.

**From Researcher to Outreach**

*L. Laursen*

A career in outreach makes connecting science with the public a full-time job.

## SCIENCE TRANSLATIONAL MEDICINE

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Integrating Medicine and Science

**PERSPECTIVE: Rod-Derived Cone Viability Factor for Treating Blinding Diseases—From Clinic to Redox Signaling**

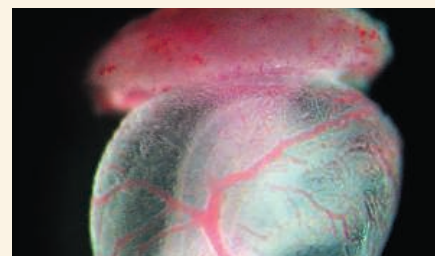
*T. Léveillard and J.-A. Sahel*

A neuroprotective protein may be broadly useful for treating degenerative retinal diseases caused by mutations in a number of different genes.

**COMMENTARY: Training Translators for Smart Drug Discovery**

*C. Skarke and G. A. FitzGerald*

Human capital is a rate-limiting constraint in translational medicine and therapeutics.



SCIENCESIGNALING  
Building blood vessels.

**RESEARCH ARTICLE: Klf15 Deficiency Is a Molecular Link Between Heart Failure and Aortic Aneurysm Formation**

*S. M. Haldar et al.*

Klf15 deficiency causes cardiomyopathy and aortopathy by a shared mechanism and defines a novel therapeutic pathway.

**RESEARCH ARTICLE: Airway PI3K Pathway Activation Is an Early and Reversible Event in Lung Cancer Development**

*A. M. Gustafson et al.*

A cancer-associated signaling pathway is reversibly activated in the normal airways of smokers before they develop lung cancer.

## SCIENCEPODCAST

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