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Cranium of Australopithecus sediba (specimen UW88-50), a new species of australopith 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

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**RESEARCH ARTICLES**

195  Australopithecus sediba: A New Species of Homo-Like Australopith from South Africa  
L. R. Berger et al.  
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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 IBr⁻(CO₂) 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.  
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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-RARα 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.

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RESEARCH ARTICLE: AAA+ Proteins RUVRBL1 and RUVRBL2 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. Tang
Inhibition of the kinase activity of LRRK2 may be neuroprotective.

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www.sciencemag.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 Outreacher
L. Loursen
A career in outreach makes connecting science with the public a full-time job.

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PERPECTIVE: 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.