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

170 CORRECTIONS AND CLARIFICATIONS

175 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 >>
REVIEW
187  Four-Dimensional Electron Microscopy
A. H. Zewail

RESEARCH ARTICLES
195  Australopithecus sediba: A New Species of Homo-Like Australopith 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 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.
>> 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-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.

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

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.

Reconstitution of Outer Membrane Protein Assembly from Purified Components
C. L. Hagan et al.

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

SCIENCECAREERS
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. Laursen

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

SCIENCECAREERS
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. Laursen

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

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. Starke and G. A. FitzGerald

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

SCIENCECAREERS
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. Laursen

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

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. Starke and G. A. FitzGerald

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

SCIENCECAREERS
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. Laursen

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

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. Starke and G. A. FitzGerald

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