

EDITORIAL

- 1117 **New Rules for Biosecurity**
Kavita M. Berger and Alan I. Leshner

NEWS OF THE WEEK

- 1124 **Celebrity Fossil Primate: Missing Link or Weak Link?**
- 1125 **Obama Turns to NASA Veterans to Lead Space Agency**
- 1126 **As Research Funding Declines, Chávez, Scientists Trade Charges**
- 1127 **New Details on Virus's Promiscuous Past**
>> *Science Express Report by R. J. Garten et al.*
- 1128 **NSF: The Money to Meet the President's Priorities**
Digging for Fresh Ideas in the Sandpit
- 1129 **From the Science Policy Blog**
- 1130 **Arsenic and Old Mummies: Poison May Have Spurred First Mummies**
- 1131 **A Cloudy Crystal Ball for the Coming Season's Hurricanes**
- 1131 **From Science's Online Daily News Site**
- 1132 **Mystery of the Missing Humpbacks Solved by Soviet Data**
- 1133 **Protecting the Last Great Tuna Stocks**

NEWS FOCUS

- 1134 **Biologists Struggle to Solve Bat Deaths**
>> *Science Podcast*
- 1136 **Gut Reactions**
>> *Science Careers article p. 1113*
- 1138 **Obama Moves to Revitalize Chesapeake Bay Restoration**

LETTERS

- 1140 **"Agriculture" Is Not a Dirty Word**
A. S. Levine
Schools Anxiously Await NRC Program Rankings
Z. Bar-Joseph
Response
J. P. Ostriker and C. Kuh
White Wolves Can Stand the Heat
A. H. Harcourt

1143 CORRECTIONS AND CLARIFICATIONS

1143 TECHNICAL COMMENT ABSTRACTS

BOOKS ET AL.

- 1144 **Revisiting Race in a Genomic Age**
B. A. Koenig et al., Eds., reviewed by T. Duster
- 1145 **Endocrinology of Social Relationships**
P. T. Ellison and P. B. Gray, Eds., reviewed by E. Adkins-Regan
- 1146 **Browsings**

EDUCATION FORUM

- 1147 **Tenure and the Future of the University**
D. Clawson

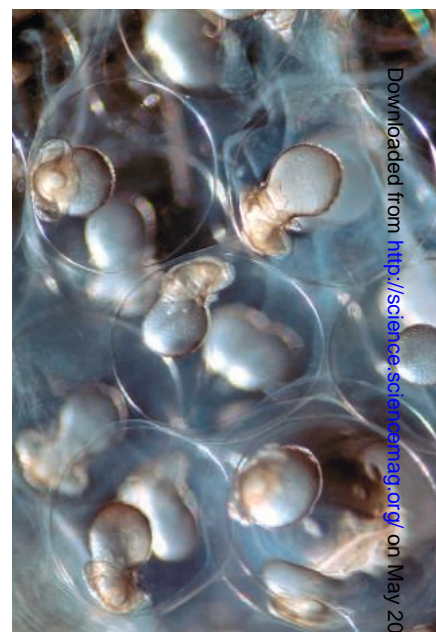
PERSPECTIVES

- 1149 **Celebrating the 400th Anniversary of Telescope Astronomy**
G. F. Bignami
- 1150 **Getting in Touch with Your Friends**
C. J. Marx
- 1152 **Slabs Do Not Go Gently**
G. Nolet
>> *Report p. 1173*
- 1153 **What Determines Coral Health?**
V. M. Weis and D. Allemand
- 1155 **Sorting Out Diabetes**
C. M. Orme and J. S. Bogan
>> *Report p. 1192*
- 1156 **It's the DNA That Counts**
C. D. Smolke
>> *Report p. 1199*

CONTENTS continued >>

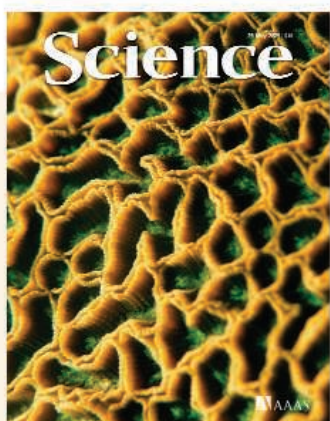


page 1134



page 1146

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COVER

A close-up of the tropical coral *Favia speciosa*. The position and age of related fossil corals have been used to constrain the timing of sea-level rise during the penultimate deglacial period. The timing of past sea-level change, relative to potential forcings, can help determine the mechanisms of climate change and the speed of ice sheet collapse. See page 1186.

Photo: Getty Images

DEPARTMENTS

- 1115 **This Week in Science**
- 1118 **Editors' Choice**
- 1120 **Science Staff**
- 1123 **Random Samples**
- 1158 **AAAS News & Notes**
- 1217 **New Products**
- 1218 **Science Careers**

REVIEW

- 1160 The Computation of Social Behavior
T. E. J. Behrens et al.

BREVIA

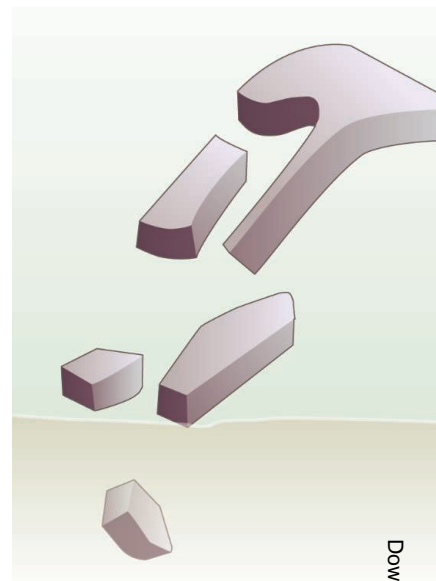
- 1165 Entropic Evidence for Linguistic Structure in the Indus Script
R. P. N. Rao et al.
Analysis of the pattern of symbols confirms the linguistic role of ancient signs.

REPORTS

- 1166 Magnetic Field Sensing Beyond the Standard Quantum Limit Using 10-Spin NOON States
J. A. Jones et al.
Quantum mechanical entanglement of nuclei in a single molecule results in an enhancement of the magnetic field sensitivity.
- 1169 Two-Quantum 2D FT Electronic Spectroscopy of Biexcitons in GaAs Quantum Wells
K. W. Stone et al.
Controlling the phase and timing of four optical pulses enables measurement of correlations between the electronic semiconductor carriers.
- 1173 Tearing of Stagnant Slab
M. Obayashi et al.
A tear in the plate in the mantle provides information on the subduction history of the western Pacific.
>> *Perspective p. 1152*
- 1175 Assessment of Undiscovered Oil and Gas in the Arctic
D. L. Gautier et al.
About 30 percent of the world's undiscovered gas and 13 percent of the world's undiscovered oil probably exist north of the Arctic Circle.
>> *Science Podcast*
- 1179 Volcanism, Mass Extinction, and Carbon Isotope Fluctuations in the Middle Permian of China
P. B. Wignall et al.
Fossiliferous rocks from southwest China show that a major extinction in the Middle Permian coincided with extensive volcanic eruptions.
- 1183 Implications of Limiting CO₂ Concentrations for Land Use and Energy
M. Wise et al.
Technologies for growing crops are potentially as important for limiting the concentration of atmospheric CO₂ as are those for capture and storage.

- 1186 Penultimate Deglacial Sea-Level Timing from Uranium/Thorium Dating of Tahitian Corals
A. L. Thomas et al.
Sea levels rose during the penultimate deglaciation while Northern Hemisphere insolation was at a minimum.
- 1190 Topographical and Temporal Diversity of the Human Skin Microbiome
E. A. Grice et al.
The human skin provides a landscape of dry, damp, and greasy niches for a diversity of symbiotic microorganisms.
- 1192 A Role for the CHC22 Clathrin Heavy-Chain Isoform in Human Glucose Metabolism
S. Vassilopoulos et al.
A human-specific vesicle-forming protein regulates relocation of a glucose transporter to the cell membrane.
>> *Perspective p. 1155*
- 1196 Proteasomal Regulation of the Hypoxic Response Modulates Aging in *C. elegans*
R. Mehta et al.
Induction of the hypoxic response in a worm slows aging and enhances resistance to proteotoxicity.
- 1199 Synthetic Gene Networks That Count
A. E. Friedland et al.
Genetic counters with the ability to count up to three induction events are constructed in *Escherichia coli*.
>> *Perspective p. 1156*
- 1203 Structural Basis of Transcription: Backtracked RNA Polymerase II at 3.4 Angstrom Resolution
D. Wang et al.
A backtracked RNA polymerase II reveals how the enzyme proofreads the RNA transcript.
- 1207 High-Frequency, Long-Range Coupling Between Prefrontal and Visual Cortex During Attention
G. G. Gregoriou et al.
Synchrony in neuronal firing within a specific frequency range may regulate interactions between brain structures.
- 1210 Genome-Wide Identification of Human RNA Editing Sites by Parallel DNA Capturing and Sequencing
J. B. Li et al.
Hundreds of new RNA editing sites are identified in the human genome.
- 1213 Unstable Tandem Repeats in Promoters Confer Transcriptional Evolvability
M. D. Vences et al.
Unstable repetitive DNA in the control regions of yeast genes modulates the evolution of chromatin structure and gene expression.

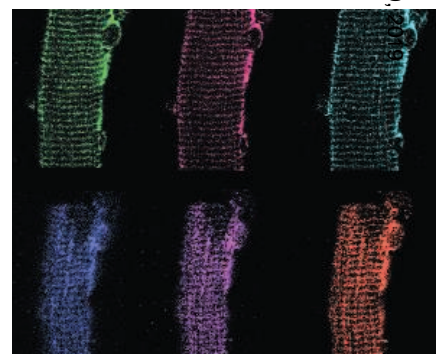
CONTENTS continued >>



pages 1152 & 1173



page 1169



pages 1155 & 1192

SCIENCEONLINE

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Antigenic and Genetic Characteristics of Swine-Origin 2009 A(H1N1) Influenza Viruses Circulating in Humans

R. J. Garten et al.

Evolutionary analysis suggests a triple reassortant avian-to-pig origin for the 2009 influenza A(H1N1) outbreak.

10.1126/science.1176225

>> *News story p. 1127*

Essential Role of the Glycosyltransferase Sxc/Ogt in Polycomb Repression

M. C. Gambetta et al.

The Polycomb-group protein super sex combs acts to glycosylate a second Polycomb repressor protein.

10.1126/science.1169727

IL-21R on T Cells Is Critical for Sustained Functionality and Control of Chronic Viral Infection

A. Fröhlich et al.

Thymus cells of the immune system require the cytokine interleukin-21 to control chronic viral infections.

10.1126/science.1172815

Structure and Mechanism of an Amino Acid Antiporter

X. Gao et al.

The architecture of a membrane protein channel helps explain how *Escherichia coli* survive the acidic conditions of the stomach.

10.1126/science.1173654

Ventral Tegmental Area BDNF Induces an Opiate-Dependent-Like Reward State in Naïve Rats

H. Vargas-Perez et al.

A growth factor involved in neuronal plasticity alters neurons in a specific area of the brain after chronic exposure to opioid drugs.

10.1126/science.1168501

Venezuelan Science at Risk

C. Bifano

10.1126/science.1176733

TECHNICALCOMMENTS

Comment on "A Large Excess in Apparent Solar Oblateness Due to Surface Magnetism"

J. R. Kuhn et al.

full text at www.sciencemag.org/cgi/content/full/324/5931/1143-b

Response to Comment on "A Large Excess in Apparent Solar Oblateness Due to Surface Magnetism"

M. D. Fivian et al.

full text at www.sciencemag.org/cgi/content/full/324/5931/1143-c

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Dissolved minerals might have kept liquid flowing on the Red Planet.

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Biochemical signals from tumors cause anxiety and depression in rats.

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The Signal Transduction Knowledge Environment

EDITORIAL GUIDE: "Omic" Risk Assessment

M. B. Major and R. T. Moon

Integration of multiple data sets is the key to hit validation.

RESEARCH ARTICLE: System-Wide Changes to SUMO Modifications in Response to Heat Shock

F. Golebiowski et al.

SUMO is redistributed among many targets to mediate both short- and long-term signaling events.

RESEARCH ARTICLE: Bruton's Tyrosine Kinase Revealed as a Negative Regulator of Wnt-β-Catenin Signaling

R. G. James et al.

Combining an siRNA screen with a small-molecule screen reveals a negative pathway regulator.

REVIEW: CD36, a Scavenger Receptor Involved in Immunity, Metabolism, Angiogenesis, and Behavior

R. L. Silverstein and M. Febbraio

Signaling by CD36 is ligand and cell specific and is implicated in multiple human diseases.

EVENTS

Plan your travel with this list of meetings, conferences, and workshops related to cell signaling.

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In Person: Breaking All the Rules

R. Ley

Two-scientist couples do not have to compromise their research careers.

>> *News story p. 1136*

A Tale of Two Pathologists

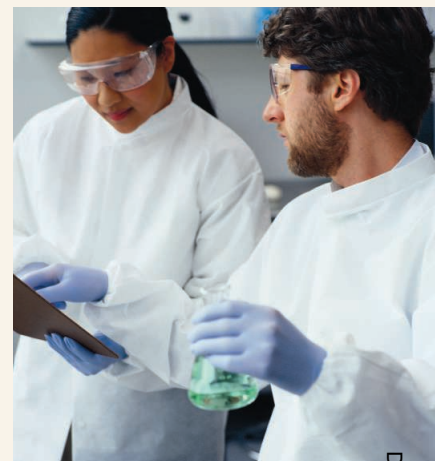
A. Sasso

Terrill Topps and Dorkina Myrick have two careers, three doctoral degrees, and one life together.

Finding His Voice by Silencing Genes

E. Pain

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324 (5931)

Science **324** (5931), 1115-1217.

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