Honey bees (*Apis mellifera*), here shown on a honeycomb, form complex societies and interact with one another by means of stereotyped social behaviors. A special section beginning on page 891 explores what genetic approaches have taught us about behavior in bees and other species, including humans.

*Image: Don Farrall, Getty Images*

**EDITORIAL**

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Rules for Ocean Fertilization Could Repel Companies

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Engineering a Fix for Broken Nervous Systems

The Graying of NIH Research
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The Air Noncoding RNA Epigenetically Silences Transcription by Targeting G9a to Chromatin
T. Nagano et al.
Air, a large noncoding RNA, interacts with chromatin at a particular promoter, recruiting a histone methyltransferase to silence gene expression in an allele-specific manner.
10.1126/science.1163802

PLANT SCIENCE
Long-Lived Volcanism on the Lunar Farside Revealed by SELENE Terrain Camera
J. Haruyama et al.
Images of the Moon by the SELENE spacecraft and revised dates of lava flows by crater counts imply that episodic volcanism on the farside lasted to 2.5 billion years ago.
10.1126/science.1163382

MOLECULAR BIOLOGY
Photoexcited CRY2 Interacts with CIB1 to Regulate Transcription and Floral Initiation in Arabidopsis
H. Liu, X. Yu, K. Li, J. Klejnot, H. Yang, D. Listero, C. Lin
Blue light triggers the association of a photoreceptor, transcription factor, and DNA site, thus inducing expression of the gene FT (flowering time) and initiating flowering.
10.1126/science.1163927

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R. Debruyne, C. Schwarz, H. Poinar
full text at www.sciencemag.org/cgi/content/full/322/5903/857a
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M. T. P. Gilbert, W. Miller, S. C. Schuster
full text at www.sciencemag.org/cgi/content/full/322/5903/857b

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Bioactive Contaminants Leach from Disposable Laboratory Plasticware
G. R. McDonald et al.
A lipid molecule and a quaternary ammonium biocide that are used in making plastic labware can contaminate common enzyme and binding assays, altering the results.

RESEARCH ARTICLES
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Global Protein Stability Profiling in Mammalian Cells
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Identification of SCF Ubiquitin Ligase Substrates by Global Protein Stability Profiling
H. -C. S. Yen and S. J. Elledge
A method that determines the half lives of all cellular proteins has been used to identify targets of a ubiquitin ligase, which controls the cell cycle through protein degradation.

REPORTS
APPLIED PHYSICS
Slow Electron Cooling in Colloidal Quantum Dots
A. Pandey and P. Guyot-Sionnest
The lifetime of excited states of electron-hole pairs in CdSe quantum dots can be extended to nanosecond time scales with an electron-insulating ZnSe coating.
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resulting from quiescent germline stem cells is indexed in the

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Radiocarbon dates on Himalayan sediments show that graphite is
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A Geological Stabilization of Carbon in the Crust
V. Galy, O. Beyssac, C. France-Lanord, T. Eglinton

Viral Integration
does not integrate into the genome.

Pluripotent cells can be created by introducing transcription factor
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Lack ofExposed Ice Inside Lunar South Pole
ShackletonCrater
J. Haruyama et al.
A view into the permanently shaded Shackleton crater from the
SELENE (KAGUYA) spacecraft now orbiting the Moon shows that it
lacks large visible water-ice deposits.

A Test ofClimate, Sun, and Culture Relationships
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P. Zhang et al.
An 1800-year-long record of the Asian Monsoon from a Chinese
stalagmite shows that its strength waned, causing drought, during the
end of three prominent dynasties.

Recycling ofGraphite During Himalayan Erosion:
A Geological Stabilization of Carbon in the Crust
V. Galy, O. Beyssac, C. France-Lanord, T. Eglinton
Radiocarbon dates on Himalayan sediments show that graphite is
preserved, whereas other carbon is oxidized, and that metamorphism
stabilizes carbon over geologic time.

InducedPluripotent Stem Cells Generated Without
ViralIntegration
M. Stadtfeld et al.
Transient exposure of mouse fibroblast and liver cells to adenovirus
vectors carrying factors that induce pluripotency generates stem cells
without viral elements in the genome.

Generation ofMouse Induced Pluripotent Stem
Cells Without Viral Vectors
K. Okita et al.
Pluripotent cells can be created by introducing transcription factor
genes into mouse embryonic fibroblasts on a plasmid that does not
integrate into the genome.

Flanking Context Determines the Ability of Zebrafish
Vasa to Direct the Maternal-Genetic Program
K. Okita et al.
Reducing or oxidizing conditions segregates rhenium or palladium
at the surface of Rh-Pd (but not Pt-Pd) nanoparticles, facilitating the
tuning of their catalytic properties.

Structural insights into the interaction between
translation initiation factors and ribosomes
A. Weixlbaumer et al.
A perspective on the structure of RF2 bound to the ribosome.

Fat Metabolism Links Germline Stem Cells and
Longevity in C. elegans
M. C. Wang, E. J. O’Rourke, G. Ruvkun
Longevity in C. elegans resulting from quiescent germline stem cells
or reduced insulin signaling is caused by induction of a lipase gene
that promotes fat mobilization.

Promoting Axon Regeneration in the Adult CNS
by Modulation of the PTEN/mTOR Pathway
K. K. Park et al.
Reactivation of a key growth control pathway by experimentally deleting
an inhibitor can overcome the inability of severed mouse retinal
ganglion cells to regenerate.

PirB Is a Functional Receptor for Myelin Inhibitors
of Axonal Regeneration
J. K. Atwal et al.
Proteins embedded in the myelin wrappings of axons inhibit regeneration
of injured nerves, in part, by binding to an immunoglobulin-like receptor
on growth cones.

“Who” Is Saying “What”? Brain-Based Decoding
of Human Voice and Speech
E. Formisano, F. De Martino, M. Bonte, R. Goebel
Distinct patterns of activity elicited in auditory cortex by different
vowels and different speakers allows independent identification of
who is speaking and what they are saying.
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A. H. Guse and H. C. Lee
NAADP elicits an initial release of calcium, which is subsequently amplified through the action of other calcium messengers.

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This year’s award went to the scientists who discovered green fluorescent protein and developed it as an experimental tool; in Awards and Announcements.

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Lessons for postdocs.

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Taken for Granted: Postdocs and Joe the Plumber
B. L. Benderly
What early-career scientists can learn from the working class.

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M. Hermann
Throughout his career, Marc Hermann has always done exactly what he wanted.

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A. Saini
New U.K. immigration policies impose more rigid requirements than in the past.

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J. Fernández
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