



## COVER

The mirror-like surface of Anish Kapoor's sculpture "Cloud Gate" reflects the cityscape of Chicago. The theme of the AAAS Annual Meeting in Chicago, 12 to 16 February 2009, acknowledges the 150th anniversary of Charles Darwin's *On the Origin of Species*, and the meeting starts on his 200th birthday. See the preliminary program beginning on page 762.

Image: Paul Sampson

## DEPARTMENTS

- 643 Science Online
- 645 This Week in *Science*
- 651 Editors' Choice
- 654 Contact *Science*
- 655 Random Samples
- 657 Newsmakers
- 696 AAAS News & Notes
- 761 New Products
- 762 AAAS Meeting Program
- 772 Science Careers

## EDITORIAL

- 649 Science and China's Modernization  
by Wen Jiabao

## NEWS OF THE WEEK

- Scientists Plant Grass-Roots Effort for Obama in Final Days of Contest 658
- Eat, Drink, and Be Wary: A Sugar's Sour Side 659
- SCIENCESCOPE** 661
- Two Sets of Cave Bear DNA Uncover the Bear Facts 662
- U.K. Approves New Embryo Law 663

## NEWS FOCUS

- You Say You Want a Revolution 664  
>> *Science Podcast*
- More Than Skin Deep 667  
Paul Klee, a Tragic Metamorphosis
- Society of Vertebrate Paleontology 68th Annual Meeting 670  
Skulls Show Dinos Blew Their Horns  
Two Legs Good  
Snapshots From the Meeting

## LETTERS

- Informed Consent in Social Science *P. Couture* 672  
Response *J. A. List*
- Viewing NASA's Mars Budget with Resignation *A. Stern*
- Food Insecurity's Dirty Secret *R. Lal*
- CORRECTIONS AND CLARIFICATIONS** 674



## BOOKS ET AL.

### Political Science

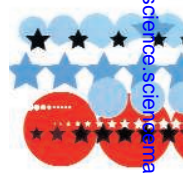
- Red State, Blue State, Rich State, Poor State** 676  
Why Americans Vote the Way They Do  
*A. Gelman et al., reviewed by T. N. Clark and C. Graziul*
- Electronic Elections** The Perils and Promises of Digital Democracy *R. M. Alvarez and T. E. Hall,* reviewed by *W. R. Mebane Jr.* 677
- BROWSINGS** 677
- The Hidden Costs of Clean Election Reform** 678  
*F. C. Schaffer, reviewed by M. Johnston*
- The Persuadable Voter** Wedge Issues in Presidential Campaigns *D. S. Hillygus and T. G. Shields,* reviewed by *D. A. M. Peterson* 679
- Mathematics and Democracy** Designing Better Voting and Fair-Division Procedures *S. J. Brams,* reviewed by *I. McLean* 680
- Unequal Democracy** The Political Economy of the New Gilded Age *L. M. Bartels, reviewed by R. Grafstein* 681

## EDUCATION FORUM

- PhET: Simulations That Enhance Learning *C. E. Wieman, W. K. Adams, K. K. Perkins* 682
- Genomics Education Partnership *D. Lopatto et al.* 684

## PERSPECTIVES

- Assessing Ground Shaking *D. R. H. O'Connell* 686  
>> *Report p. 727*
- Whither Hurricane Activity? *G. A. Vecchi et al.* 687
- Nanoscale Polymer Processing *C. L. Soles and Y. Ding* 689  
>> *Report p. 720*
- Physiology and Climate Change *H. O. Pörtner and A. P. Farrell* 690



677

Downloaded from <http://science.sciencemag.org/> on February 22, 2019

CONTENTS continued >>



## SCIENCE EXPRESS

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

## CHEMISTRY

**Time-Resolved Dynamics in N<sub>2</sub>O<sub>4</sub> Probed Using High Harmonic Generation**  
W. Li et al.

Electrons can be ejected from multiple orbitals of N<sub>2</sub>O<sub>4</sub> by exploiting different stages in its excited vibrations, yielding an attosecond light probe of molecular dynamics.

10.1126/science.1163077

## BIOCHEMISTRY

**Structural Evidence for Common Ancestry of the Nuclear Pore Complex and Vesicle Coats**

S. G. Brohawn et al.

The protein complex that controls entry and exit from the cell nucleus shares a structural element with vesicle coat proteins, suggesting that it is built around a lattice-like scaffold.

10.1126/science.1165886

**LETTER: European Union and NIH Collaborate**

E. A. Zerhouni and J. Potočnik

10.1126/science.1167667

## MICROBIOLOGY

**BREVIA: Bat White-Nose Syndrome: An Emerging Fungal Pathogen?**

D. S. Blehert et al.

Bats that died en masse in New York state while they were hibernating were infected with a cold-tolerant fungus.

10.1126/science.1163874

## CHEMISTRY

**High Harmonic Generation from Multiple Orbitals in N<sub>2</sub>**

B. K. McFarland, J. P. Farrell, P. H. Bucksbaum, M. Gühr

Electron ejection from multiple N<sub>2</sub> orbitals, controlled by the molecule's orientation relative to a laser, produces attosecond light spectra that can reveal molecular dynamics.

10.1126/science.1162780

## PERSPECTIVES CONTINUED...

**Aneuploidy Advantages?** 692

E. Hernando >> *Research Article p. 703*

**A New Glance at Glia** 693

A. Reichenbach and T. Pannicke >> *Report p. 744*

**Retrospective: George E. Palade (1912–2008)** 695

R. W. Schekman

## TECHNICAL COMMENT ABSTRACTS

## PHYSIOLOGY

**Comment on "Differential Rescue of Light- and Food-Entrainable Circadian Rhythms"** 675

R. E. Mistlberger et al.

[full text at www.sciencemag.org/cgi/content/full/322/5902/675a](http://www.sciencemag.org/cgi/content/full/322/5902/675a)

**Response to Comment on "Differential Rescue of Light- and Food-Entrainable Circadian Rhythms"**

P. M. Fuller, J. Lu, C. B. Saper

[full text at www.sciencemag.org/cgi/content/full/322/5902/675b](http://www.sciencemag.org/cgi/content/full/322/5902/675b)

## REVIEW

## BIOCHEMISTRY

**Structural Insights into a Circadian Oscillator** 697

C. H. Johnson, M. Egli, P. L. Stewart

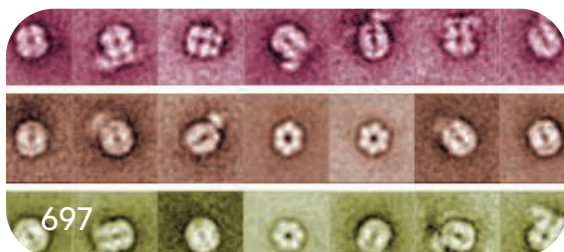
## BREVIA

## MICROBIOLOGY

**Wolbachia and Virus Protection in Insects** 702

L. M. Hedges, J. C. Brownlie, S. L. O'Neill, K. N. Johnson

An endosymbiotic bacterium survives and spreads in populations of *Drosophila* because it protects its insect hosts from death caused by certain RNA viruses. >> *Science Podcast*



697

## RESEARCH ARTICLES

## CELL BIOLOGY

**Aneuploidy Affects Proliferation and Spontaneous Immortalization in Mammalian Cells** 703

B. R. Williams et al.

Mouse cell lines carrying extra copies of one of four chromosomes all show less cell proliferation and higher gene expression, but vary in how fast they become cancer-like cells. >> *Perspective p. 692*

## BIOCHEMISTRY

**Structure and Molecular Mechanism of a Nucleobase-Cation-Symport-1 Family Transporter** 709

S. Weyand et al.

The structure of a membrane transporter in an open state suggests that in- and out-facing cavities reciprocally open and close coordinated by two transmembrane segments.

## REPORTS

## PLANETARY SCIENCE

**Magnetism on the Angrite Parent Body and the Early Differentiation of Planetesimals** 713

B. P. Weiss et al.

A type of primitive meteorite from the earliest small bodies in the solar system preserves remnant magnetism, implying that these planetesimals had a convecting metallic core.

## PHYSICS

**The Role of Impulse on the Initiation of Particle Movement Under Turbulent Flow Conditions** 717

P. Diplas et al.

Entrainment of sediment grains from, say, a stream bed, by turbulent flow depends not just on the magnitude of the applied fluid forces but also on their duration.

## MATERIALS SCIENCE

**Molecular Confinement Accelerates Deformation of Entangled Polymers During Squeeze Flow** 720

H. D. Rowland et al.

When polymers are squeezed at nanometer scales, the longest chains unexpectedly flow more easily, even though in theory they should be the most entangled. >> *Perspective p. 689*

CONTENTS continued >>

REPORTS CONTINUED...

GEOCHEMISTRY

Peptides Enhance Magnesium Signature in Calcite: 724  
Insights into Origins of Vital Effects

A. E. Stephenson et al.

A simple hydrophilic peptide helps to regulate the magnesium content of calcite in marine organisms, explaining a complication in using this as an ocean thermometer.

GEOPHYSICS

Trampoline Effect in Extreme Ground Motion 727  
S. Aoi, T. Kunugi, H. Fujiwara

Upward ground acceleration in a recent earthquake in Japan reached about four times that of gravity, as if the upper soil layer were bouncing on a trampoline in the ground below.

>> Perspective p. 686

ATMOSPHERIC SCIENCE

Tracing the Origin and Fate of NO<sub>x</sub> in the Arctic 730  
Atmosphere Using Stable Isotopes in Nitrate

S. Morin et al.

Measurements of N and O isotopes show that nitrate in the high Arctic is produced when spring sunlight oxidizes pollutants brought from lower latitudes since the past summer.

ANTHROPOLOGY

Ages for the Middle Stone Age of Southern Africa: 733  
Implications for Human Behavior and Dispersal

Z. Jacobs et al.

Dating of the first use of symbols and jewelry in South Africa shows that the emergence of modern human behavior was not influenced by just environmental factors.

EVOLUTION

Energy Uptake and Allocation During Ontogeny 736  
C. Hou et al.

A model of how developing animals assimilate food and allocate and store energy for maintenance, growth, and activity accurately predicts data from mammals and birds.

ECOLOGY

Experimental Evidence for Spatial Self-Organization 739  
and Its Emergent Effects in Mussel Bed Ecosystems

J. van de Koppel et al.

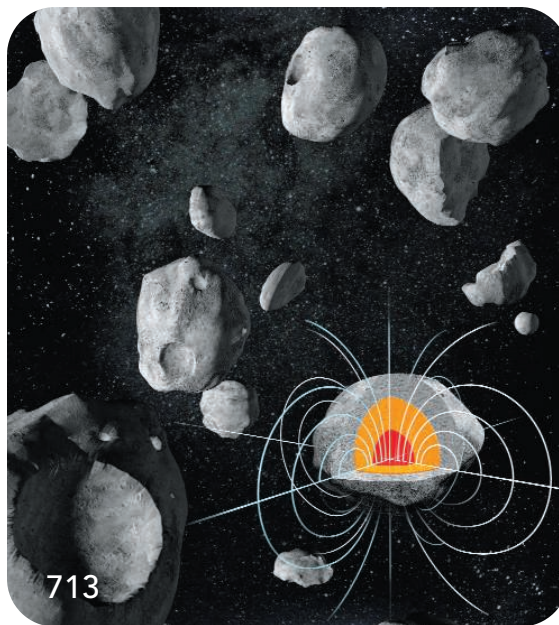
Interactions among individual mussels result in large-scale spatial patterns in mussel beds that are beneficial to the population—by promoting secondary production, for example.

ECOLOGY

Natal Homing and Connectivity in Atlantic Bluefin 742  
Tuna Populations

J. R. Rooper et al.

Isotopes in the ear bones of tuna reveal that two populations—from the Gulf of Mexico and the Mediterranean—mingle in the Atlantic as adolescents but return home to breed.



NEUROSCIENCE

Glia Are Essential for Sensory Organ Function in 744  
*C. elegans*

T. Bacaj, M. Tevlin, Y. Lu, S. Shaham

Nonneural glial cells are required for the normal operation of the main sensory organ of a nematode, influencing neuronal shape and function, as well as behavior. >> Perspective p. 693

GENETICS

HARP Is an ATP-Driven Annealing Helicase 748  
T. Yusufzai and J. T. Kadonaga

The gene deleted in a complex genetic disease is a reverse helicase, a motor-like enzyme that uses adenosine triphosphate to zip up separated strands of DNA.

MOLECULAR BIOLOGY

Polycomb Proteins Targeted by a Short Repeat RNA 750  
to the Mouse X Chromosome

J. Zhao, B. K. Sun, J. A. Erwin, J.-J. Song, J. T. Lee

A small RNA cleaved from a larger precursor recruits silencing proteins to the X chromosome to inactivate it in female mammals, which have an extra copy.

IMMUNOLOGY

Deletion of *Trpm7* Disrupts Embryonic Development 756  
and Thymopoiesis Without Altering Mg<sup>2+</sup> Homeostasis

J. Jin et al.

A cation channel that conducts both Ca<sup>2+</sup> and Mg<sup>2+</sup> is unexpectedly required for normal mouse development, specifically for proper maturation of the thymus and T cells.



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CONTENTS continued >>>

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HIGHLIGHTS FROM OUR DAILY NEWS COVERAGE

### Viagra Stands Firm Against Muscular Dystrophy

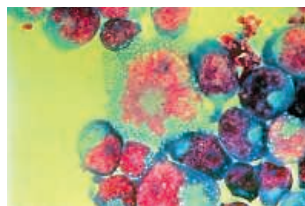
Famous anti-impotence pill might compensate for muscle-weakening enzyme deficiency.

### Thanks for Erasing the Memories

Combination of genetic engineering and drugs wipes out specific memories in mice.

### Not Your Garden-Variety Tomato

Researchers engineer cancer-fighting purple tomatoes.



Enthusiasm for virology.

## SCIENCE CAREERS

[www.sciencereers.org/career\\_development](http://www.sciencereers.org/career_development)

FREE CAREER RESOURCES FOR SCIENTISTS

### The Pathways to Independence Award: Early Returns

*S. Carpenter*

NIH's new transition awards program seems to be achieving its goal.

### The Other Life Sciences Industry

*C. Mintz*

The medical devices and diagnostics industry is underappreciated as a life sciences career destination.

### A Virologist With a Contagious Enthusiasm

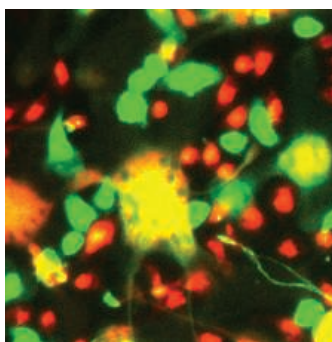
*E. Pain*

French virologist Ali Saib is praised for his research achievements and efforts to attract a diversity of people to science.

### From the Archives: Lab Dynamics—Science at the Balcony

*C. M. Cohen and S. L. Cohen*

How you discuss content or data can be as important as the content or data itself.



Programming macrophages to fuse.

## SCIENCE SIGNALING

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

THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

### RESEARCH ARTICLE: Essential Role of DAP12 Signaling in Macrophage Programming into a Fusion-Competent State

*L. Helming, E. Tomasello, T. R. Kyriakides, F. O. Martinez, T. Takai, S. Gordon, E. Vivier*

Signaling through the DAP12 adaptor triggers a gene expression profile that makes macrophages competent to fuse and form multinucleated giant cells.

### PROTOCOL: High-Resolution Imaging of Redox Signaling in Live Cells Through an Oxidation-Sensitive Yellow Fluorescent Protein

*G. Maulucci, V. Labate, M. Mele, E. Panieri, G. Arcovito, T. Galeotti, H. Østergaard, J. R. Winther, M. De Spirito, G. Pani*

Measure and visualize intracellular changes in the redox state.

### JOURNAL CLUB: The HIF-1 $\alpha$ -C/EBP $\alpha$ Axis

*H. P. Janardhan*

Interactions between HIF-1 $\alpha$  and C/EBP $\alpha$  may mediate reciprocal functional effects.

### PODCAST

*R. Linding and A. M. VanHook*

Rune Linding explains how combining NetPhorest with a genetic screen enables researchers to gain insight into the relationships among the identified players.

## SCIENCE PODCAST

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