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

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649 Science and China’s Modernization by Wen Jiabao

NEWS OF THE WEEK
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Why Americans Vote the Way They Do
A. Gelman et al., reviewed by T. N. Clark and C. Graziul

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The Perils and Promises of Digital Democracy

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The Hidden Costs of Clean Election Reform
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

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Designing Better Voting and Fair-Division Procedures S. J. Brams, reviewed by I. McLean

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The Political Economy of the New Gilded Age L. M. Bartels, reviewed by R. Grafstein

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Genomics Education Partnership D. Lopatto et al.

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Whither Hurricane Activity? G. A. Vecchi et al.
Nanoscale Polymer Processing C. L. Soles and Y. Ding
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Physiology and Climate Change H. O. Pörtner and A. P. Farrell

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ATTACHMENT
Dear Reader,

The Scanimation project is an innovative approach to creating animated images using motion in the HERMES tunnel at CERN. This project not only demonstrates the potential of new technologies in science education but also showcases the importance of collaboration and interdisciplinary efforts in advancing scientific knowledge. The rhythmic display of images appears as if they are moving, providing a unique and engaging educational experience for students of all ages. By exploring the principles behind Scanimation, we can inspire a new generation of scientists and engineers, fostering curiosity and a deeper understanding of the fundamental mechanisms that govern our world.

Sincerely,
[Signature]
[Name]

Note: The above text is a fictional example and does not reflect the actual content of the original document.
CHEMISTRY

Time-Resolved Dynamics in N₂O₄ Probed Using High Harmonic Generation
W. Li et al.
Electrons can be ejected from multiple orbitals of N₂O₄ 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 N₂
B. K. McFarland, J. P. Farrell, P. H. Bucksbaum, M. Gühr
Electron ejection from multiple N₂ 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

Aneuploidy Advantages?
E. Hernando
A New Glance at Glia
A. Reichenbach and T. Pannicke
Retrospective: George E. Palade (1912–2008)
R. W. Schekman

PHYSIOLOGY

Comment on “Differential Rescue of Light- and Food-Entrainable Circadian Rhythms”
R. E. Mistlberger et al.
full text at 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

BIOCHEMISTRY

Structural Insights into a Circadian Oscillator
C. H. Johnson, M. Egli, P. L. Stewart

MATERIALS SCIENCE

Molecular Confinement Accelerates Deformation of Entangled Polymers During Squeeze Flow
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.
10.1126/science.1167669
**REPORTS CONTINUED...**

**GEOCHEMISTRY**

Peptides Enhance Magnesium Signature in Calcite: 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

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$_2$ in the Arctic 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: 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

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 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 Tuna Populations

J. R. Rooker 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 *C. elegans*

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

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

Y. 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**

Polycym Proteins Targeted by a Short Repeat RNA 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 and Thymopoiesis Without Altering Mg$^{2+}$ Homeostasis

J. Jin et al.

A cation channel that conducts both Ca$^{2+}$ and Mg$^{2+}$ is unexpectedly required for normal mouse development, specifically for proper maturation of the thymus and T cells.
**Research Article: Essential Role of DAP12 Signaling in Macrophage Programming into a Fusion-Competent State**


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**


Measure and visualize intracellular changes in the redox state.

**Journal Club: The HIF-1α-C/EBPβ Axis**

H. P. Janardhan

Interactions between HIF-1α and C/EBPβ 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 322 (5902), 645-778.